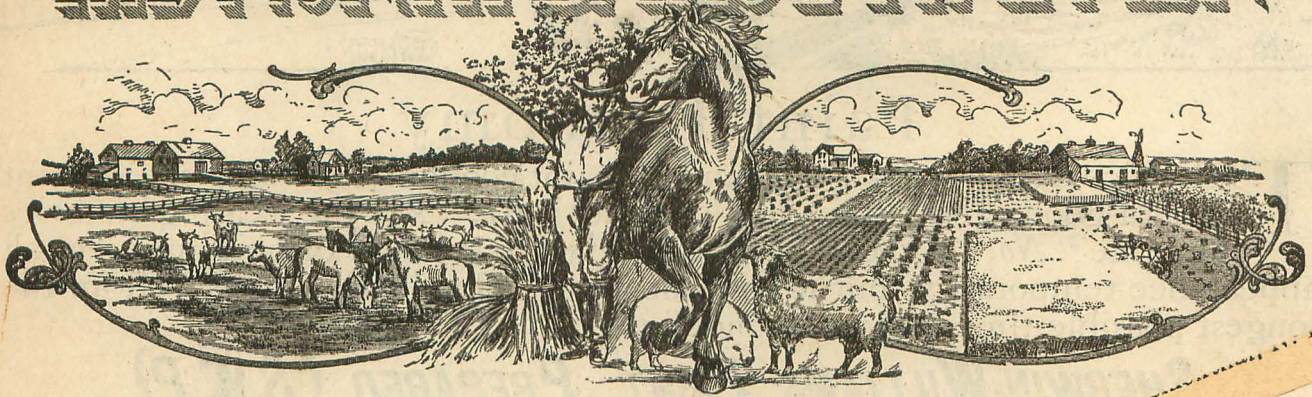


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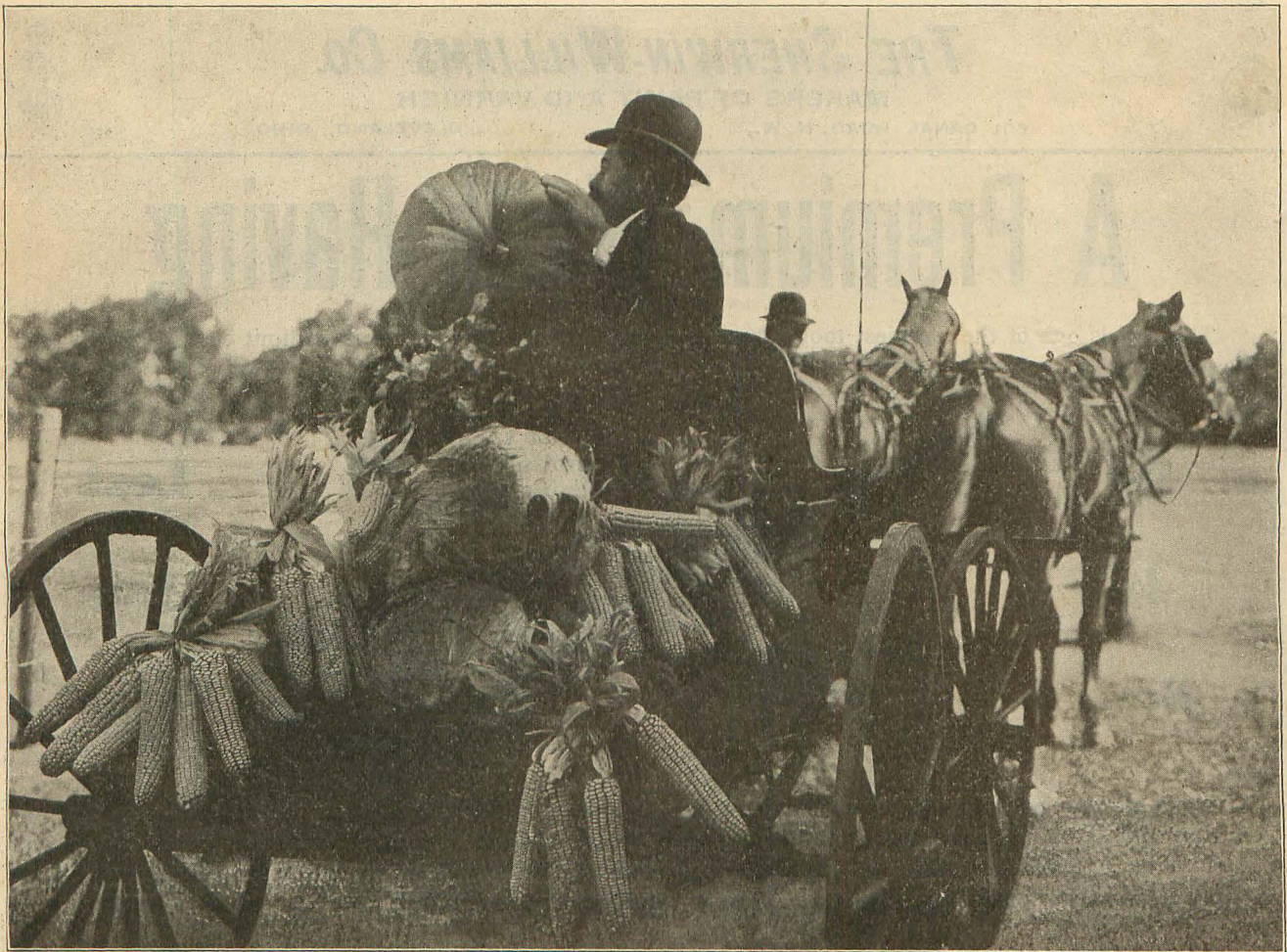
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Vol. 11, No. 11
LISBON, N. D.

MAY 15, 1910

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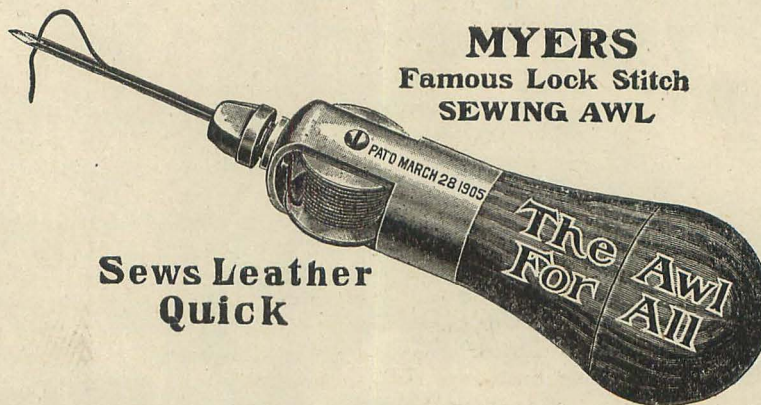


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THE NORTH DAKOTA FARMER

Vol. 11, No. 11

LISBON and FARGO, N. D., MAY 15, 1910

50 Cents a Year

Choosing a Farm

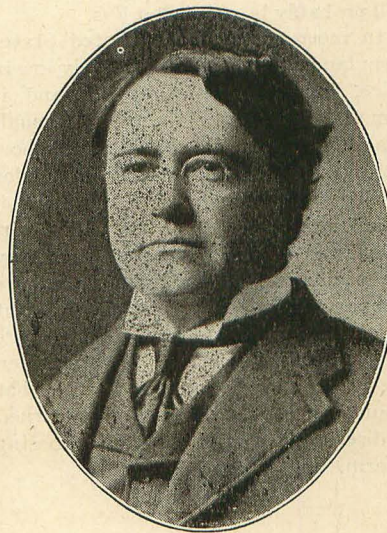
By J. C. McDowell, Assistant Agriculturist, U. S. Department of Agriculture, Waukesha, Wis.

DURING the past year I have received many letters asking about farming opportunities in various sections of the north and west. Probably three-fourths of these inquiries came from people living in the cities. The high cost of living, and the rapidity with which the prices of farm lands have advanced during the past ten years, have had much to do in causing the people of our cities to turn their attention toward the farm. Whether it be the young farmer who has been brought up under rural conditions or his city cousin who is now about to engage in the highly interesting work of farming, his success or failure will depend to a very large extent on the care and intelligence with which the farm is chosen.

Among the points to be considered in choosing a farm the following are among the most important: Location, topography, soil, drainage, climate, size of farm, quality of buildings, water supply, present condition of the farm, and, last but not least, the price per acre. Each of these topics could be separated into several sub-divisions, but for brief discussion such divisions are not necessary.

Location

Location with reference to markets, schools and churches means much to anyone who wishes to live as an American citizen is entitled to live. For all kinds of intensive farming it is almost necessary to be located close to good markets. For the production of meat and the various grain crops it is not necessary to be located so close to good markets, but even in these more extensive systems of farming markets are necessary, and often are not given enough consideration while the farm is being chosen. In this day of general education it is not fair to our children that we should forget to consider school advantages when choosing our farms.



The making of any amount of money can never take the place to our children of the opportunity to attain at least a fair degree of education. The farm located at a great distance from school, and with little prospects of soon having good school advantages should be considered to have a correspondingly low value. As almost everybody wishes church and social advantages, these must be carefully considered while choosing the place where we are to live for perhaps the remainder of our lives. The class of people we are to have for neighbors must also be considered. In order to enjoy the society of our neighbors it is necessary that we and they should have much in common. We should not be too far apart in our ideas of education, religion, and social customs.

Topography

The land should be neither too level nor too rough. If too level the drainage will be poor, and the crops will often be damaged to such an extent as greatly to reduce the profits. If the land is hilly,

stony and rough, it will not produce as good crops; and the crops will be cared for at much greater expense than on land that is gently rolling. Land that has just enough slope to provide drainage is the most desirable.

Soil

The quality of the soil and sub-soil is of prime importance. With a light sandy soil, or with one that is a heavy sticky clay, the crops will not be as satisfactory as with a more medium soil. There are, of course, certain crops that are adapted to particular soils, and the type of farming must be considered while deciding the quality of soil to choose. For the production of grass crops one will choose the heavier soil types, while for the production of potatoes one will want a lighter and more porous soil. The medium grades of soil can be made to produce most crops with much greater ease and in more abundant quantity. There are soils so heavy that they are worked with difficulty, and there are soils so light that they will hardly produce paying crops of any kind.

Drainage

Cold, poorly drained soils are of little value until they are improved by putting in a satisfactory drainage system. In many cases such drainage will cost more than the farm will be worth after it is drained. Sometimes one can get a bargain by buying swamp lands and draining them, but it is usually wise for the inexperienced to let such lands absolutely alone.

Climate

The type of farming will have much to do in determining the location with reference to climate. Too much rain may be almost as bad as too little. The great advantage that the irrigated farm has over the farm that must depend on rainfall, is that the supply of water can be regulated with a large degree of ex-

actness. While the long cold winters of our northern states require that we do most of the field work of the farm in a short time, and that we feed the livestock during a large part of the year, there is not such a great disadvantage here as one would suppose. Where the season is short, the growth of vegetation is usually rapid; and on rich soil as large crops are produced in the short season of the north as can be produced farther south. In addition to considering these points, a careful study should be made of the rainfall, especially its distribution thruout the growing months; and the danger of killing frosts in the late spring and early fall should be noted.

Size of Farm

The size of farm to choose will depend on whether one wishes to carry on intensive farming, or whether he wishes to raise cereals or go into some other system of extensive farming. I have seen farmers making money on farms of a section or more in extent, and I visited a farm only a month ago on which a man was making money in the dairy business on only 27 acres of land. These are two extremes, but I believe farmers are inclined usually to farm too much land rather than too little. Often such farmers are making their money out of the rise in value of land rather than out of skillful farming. Probably the quarter section farm is about right for the average farmer under the conditions existing in the middle west. Where land is dear the farm may be smaller, and where land is cheap the large farm has the advantage.

Quality of Buildings

The purchaser should note the value and condition of the buildings, and also whether they are well designed for the system of farming he has in mind. Old or poorly constructed buildings are often of little value. On the other hand, buildings are often purchased with the farm for much less than their real value. This point should be kept in mind in putting up new buildings after purchasing the farm. While one should put up such buildings as he needs for his livestock, it should be remembered that it is easy to get too much money invested this way.

Water Supply

A stream of good water on the farm is of great value, but in the absence of this a good well is a necessity. If the well water is strongly alkaline, or if for any other reason it is not good, this fact alone may be enough to warrant a decision against the purchase of that farm. Remember that good water, and an abundant supply of it, is a necessity on any farm.

Present Condition of the Farm

No matter how rich the soil may have been originally, and no matter how expensive the buildings may have been;

if the soil is now in a low state of fertility, and the buildings greatly in need of repair; the real value of the farm is reduced accordingly. The soil may be rich in total plant food, and it may be possible to restore it to its former fertility, but this will take time and cost money. Such a farm is not nearly so desirable as one that has been kept in a high state of fertility all the time.

Price per Acre

Altho the price paid per acre has no effect on the fertility of the soil or the income it will produce, yet if the price is high, it may be impossible to make interest and expenses, and have anything left for profits. Figuring interest at five per cent, land that sells at one hundred twenty-five dollars per acre must produce over five dollars per acre more each year than land that sells at twenty-five dollars per acre, because it will undoubtedly be taxed a little higher and the percentage of increase in value will probably be somewhat less.

In most parts of the United States farm lands are still comparatively low in price, but the lowest priced land is sometimes dearest. There is not usually a difference in price between the poorest and the best land in any particular locality, that the quality of the soil would warrant. While the less desirable farms are selling for more than they are really worth, the best farms are comparatively cheap at the prices at which they are changing hands. There is not that difference in price between the good farms and the poor, that would indicate that we have yet learned to discriminate carefully while choosing a farm.

THE FARM HOMESTEAD

By J. H. Worst

With modern labor-saving farm machinery, the drudgery of the erstwhile farmer is largely avoided. More work can be performed in less time and done better, with vastly less fatigue, than before the advent of modern machinery. Farmers quite generally avail themselves of the best machinery manufactured, regardless of cost. In this they exercise good judgment. Even with the best equipment, the labors of the farm are sufficiently strenuous.

The Farmer's Wife

But how about the farmer's wife? Have her burdens been correspondingly lessened? In these days, when domestic help is difficult to obtain, the farmer's wife is often overburdened. She must care for the children, do the family washing and churning, bake bread, prepare three meals every day, wash dishes and perform the numerous other daily tasks necessary to keep the

home tidy and presentable. She has her husband's sympathy, of course, but sympathy does not materially lighten her daily round of toil. What she needs also is labor-saving machinery.

She sees her husband come home with his brightly painted riding-plow, binder, mowing machine and drill, all of which awaken dim memories of when the farmer walked and held the plow handles, swung by main strength the cradle and scythe, and likewise scattered the grain broad cast—forms of drudgery now happily obsolete—but for her, well, she must continue to drudge with the same antiquated back-braking utensils that were in vogue in her grandmother's day. I ask, Is it fair?

The wife's labors are sufficiently strenuous even when supplied with a good girl and modern conveniences for housekeeping. These, however, are not always at her command. In many country homes such things are not even thought of. But all labor-saving machinery was not invented for the farm. The farm house has not been entirely ignored and among the many useful devices the Pressure Tank should not be overlooked. This useful invention affords many conveniences for the country home that previously were enjoyed only in city residences. Neither is it expensive when its usefulness is taken into account.

By means of this tank, which is charged by an ordinary windmill, all the conveniences of a city water system can be enjoyed in the country home. Water can be piped into every room, and with modern heating system and sewer, toilet and bathroom can be provided, two conveniences which no up-to-date country home can afford to dispense with. The pressure from the tank also will supply power which, by means of a water motor, will churn and work the butter, wash and wring the clothes and run the mangle. Hot and cold water can be supplied for the kitchen and bathroom, as well.

The initial expenses for these modern conveniences would be considerable, it is true, but the ever-recurring monthly check would not have to be made out for them, as is the case in the city. These conveniences would make life easier for the wife and children, without expending any more money for her benefit than the average husband freely expends for his own comfort.

Cement Walks

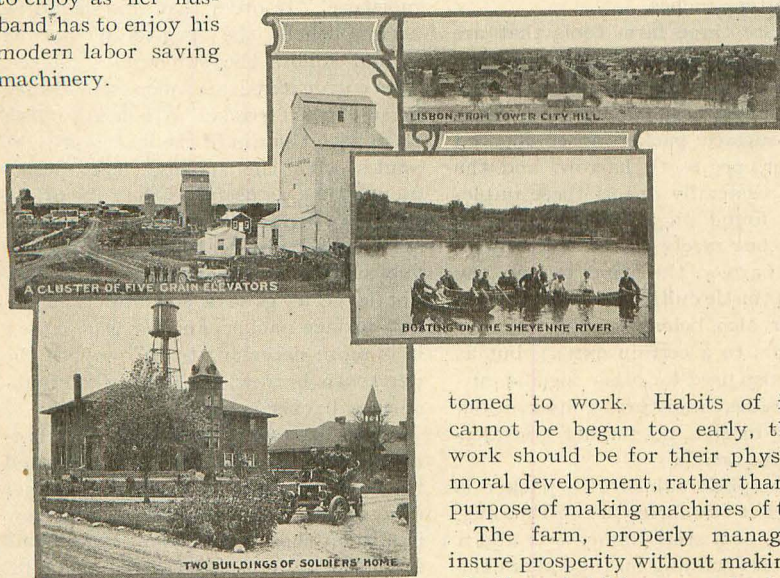
Residents of the city are compelled to construct cement sidewalks. Why not enjoy them in the country? Why not construct cement walks from the house to the barn and other farm buildings and save the wife the necessity of scrubbing mud from the floors, dragged in by many pairs of shoes? Why not pass dry shod from building to building on the

farm as the town's people pass from street to street in the city?

Why not have a dumb waiter to save the wife many weary trips up and down stairs with loads of milk pans, fruit, vegetables, etc.?

Why not have a clothes chute to slide the soiled garments from the chambers to the basement where the family washing is done?

Why not install a dough mixer to be operated by use of the water motor and save the wife the drudgery of kneading the same with her fists? These are only a few of the modern conveniences that the country housewife has as much right to enjoy as her husband has to enjoy his modern labor saving machinery.



Add to these a well kept lawn with its complement of trees, shrubbery and flower beds and many a country home will be changed from a place where the family exists, into a paradise. With such surroundings the family will enjoy larger visions of life and be the better prepared to meet its responsibilities. Grudgery for dollars, after poverty has vanished, has no excuse. The poorest man of my imagination is he who at death is divorced from all that he loved and worked for in life.

As long as the comparison between country and city homes, from the standpoint of comfort, is altogether in favor of the latter, and needlessly so, the farms are sure to be deprived of a most desirable class of young men and women.

Effect on Character.

The character of a people is largely influenced by home surroundings, especially during the period of youth. The children of the country should be enamored of rural scenery because it is natural there, and they should love the home of their parents because it is made worth loving. Parental affection goes a long way and incites duty, but in many instances it does not go far enough; it should inspire love, also.

It is true that the pinch of poverty

prevents many families from making their homes convenient and beautiful, but there are thousands of well-to-do farmers who live like barbarians for the sole purpose of swelling their bank accounts or accumulating more acres, when they already have more of both than their legitimate needs demand, or that they can properly care for. Such at least could well afford to set the example of how to live in the open country; how to enjoy life, much of the time alone with the family, with Nature, and with God.

Children Should Work

Children should be brought up accus-

tomed to work. Habits of industry cannot be begun too early, tho their work should be for their physical and moral development, rather than for the purpose of making machines of them.

The farm, properly managed, will insure prosperity without making slaves of wife and children, or a drudge of the husband. Every farm home should be a happy retreat, a model of beauty and neatness, a miniature heaven—as soon as the farmer can afford it. And he can afford it long before he is a rich, but broken down man; before his wife is in her grave, the victim of over-burdened cares; and before the children are driven disgusted from the farm where they naturally belong, to the city where they are not wanted.

Rural life will never come into its own until skill and training largely supplant brute force, and the farmer's wife and children are given relief from unnecessary hardships. The time to begin is now.

FARMERS' INSTITUTES

The North Dakota Farmers' Institute closed the winter season at Williston at April 4th. Some ninety-five meetings have been held since last November, with a total attendance of 45,000. The interest has been keen. The farmers have taken a lively part in the discussions which has helped very much to bring out the conditions that they are laboring under in the different sections. The large towns have given the larger attendance. The business men have

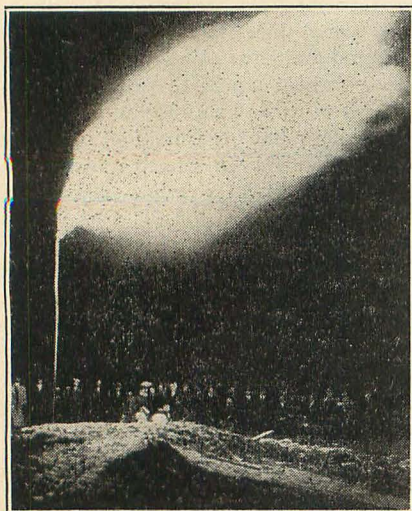
taken great interest in the meetings, having in a great many cases met the institute corps with a brass band and also furnished music at the sessions. In many towns the Commercial Clubs have furnished free dinners and oftentimes supper as well. The railroads have also been very active in assisting the institutes. The Great Northern Railway has furnished free transportation at a great many places to those who wished to attend and have also on a number of occasions held trains to accommodate those wishing to remain for an institute. The weather has been fine and but two meetings have been missed during the whole fall and winter circuit on account of stormy weather.

Previously the main attention has been given to grain growing and how to increase the fertility by growing clover and alfalfa, so that now alfalfa and clover are being grown all over the state with much success, clover, doing especially well in the eastern part and alfalfa in the western part of the state. Supt. Hoverstad states that the reports coming in from the farmers indicate that they are getting exceptional yields of seed, some hundred-acre fields averaging four and even five bushels per acre. The yields of hay are also very large, in some cases four tons to the acre and the clover lasts for a number of years; in fact cases are reported where it has been grown for ten years without reseeding. This line of teaching has been continued, but tree planting and corn growing has also been added. Mr. O. C. Gregg of Minnesota, who has been with the institutes the last season, states that he has found corn growing in all parts of this state, and very successfully, and predicts that it will be one of the prominent crops in the state, also that the Golden Dent sent out by the Fargo Agricultural College will mature in practically all parts of the state. The growing season is really longer than it was at first imagined. The frosts that are sometimes said to occur between May 15th and Sept. 15th are not blanket frosts, but merely touch some of the lower places so that there is ample time for growing a ninety day corn, and during the growing season the days are very long so that there is considerably more sunshine than is the case farther South. The cultivation for this section needs to be shallow and considerable effort should be made to select the seed corn in the field and fire dry it, which increases its vitality. One of the very valuable results from corn growing is the good condition in which it leaves the ground for the succeeding crop, being in many cases fully equal to the bare fallow, and in addition furnishes a very valuable crop.

Supt. Hoverstad states that corn and clover are now an assured success and the

one crop system is being replaced by a rotation of crops, and the farmers are reaping the larger yields which this system of farming brings about.

The following persons have been members of the Farmers' Institute corps: J. H. Worst, Pres. Dak. Agri. College;



North Dakota's Resources: Lansford has an excellent flow of natural gas

O. C. Gregg, Supt. of Farmers' Institutes in Minn. for 23 years; R. F. Flint, Bismarck, State Dairy Com., Joel Winkjer, Asst. Dairyman, U. S. Dept. of Agr. Sta.; H. L. Bolley, Botanist, Dak. Agr. College; Prof. L. B. Linfield, Director Mont. Ex. Sta.; Hon. I. D. O'Donnell of Mont; Prof. Thos. Shaw of Minn.; Col. R. A. Wilkinson of Minn.; W. R. Porser, Supt. of Dem. Farms; W. C. Palmer, Agr. Editor, N. Dak. Agr. College. An exchange was also arranged with Minnesota. Supt. Hoverstad going there for a series of meetings and N. E. Chapman doing work in North Dakota in return.

Supt. Hoverstad states that he has as many applications for institutes now as when he started the fall circuit, which shows that the interest is growing. More applications come in than it is possible to fill. He states, that this is a very opportune time for institute work as the farmers are realizing that they must improve the present methods which are resulting in decreased yields and that the farmers in this state are fortunate in this that they have the advantage of the experience of the older states and of improved machinery which make it possible for them to advance more rapidly and with much more certainty than it was possible to do a few years ago.

Moisture Conserving Machinery

By W. R. Porter, Supt. North Dakota State Demonstration Farms

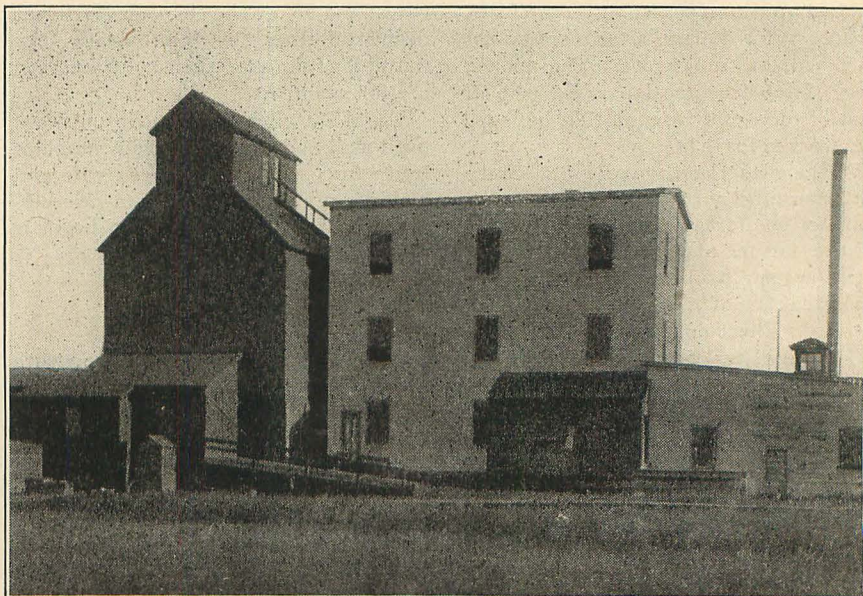
The greater part of the Dakotas is in what may be termed the eastern edge of the dry farming belt. The greater part of this territory west of the Red River Valley in North Dakota has an annual precipitation of less than 20 inches generally, which is irregularly distributed thruout the year, altho the summer months generally have a rainfall exceeding ten inches and sometimes exceeding fifteen inches.

There are three farm tools that are used to a greater or less extent to conserve what moisture falls on fields devoted to small grain, namely; the Campbell sub-surface packer or corrugated iron roller, peg-tooth harrow, and the weeder. Generally one of these implements is found on a farm, sometimes two, and but rarely the three of them. The disc harrow, the acme harrow, the Canadian thistle cultivator, and the corn cultivator also belong to this class of implements to a certain extent, but as they are also used for other specific purposes besides moisture conservation, they will receive no further consideration in this article.

The Campbell sub-surface packer is found on but few farms in the Dakotas. It consists of a steel frame, axle and a set of wheels running on the axle in the enclosed frame. Each wheel is independent of its neighbor. It has a hub of five inches in width and a V-shaped tire about one and one-half inches wide with the point of the V sinking into the ground. This machine should follow the plow the day the land is plowed or

the morning afterward. It forms the bottom of the furrow; slice down into the bottom of the furrow, thus pressing the soil firmly around any stubble, manure, litter or weeds plowed under, and at the same time fills up large air spaces in the soil. It makes what is known as a firm seed bed and by pressing the dry surface soil firmly down on the moist sub-soil does a great deal to prevent loss of soil moisture. In order that this should be accomplished the peg-tooth harrow should follow the sub-surface packer. The corrugated iron roller is in reality a sub-surface packer with heavy teeth flush with the rim of the wheels at right angles with the spokes. This implement is just as useful as the sub-surface packer in firming the sub-soil, and at the same time it crushes all clods and leaves the surface reasonably level. It does not leave as good a soil mulch as the sub-surface packer, and for that reason it is more necessary to follow with the peg-tooth harrow, than when the sub-surface packer is used.

There are two types of peg-tooth harrows, the iron and the wooden frame and they are so familiar as to need no further description. As a rule, the iron harrow is heavier than the wooden harrow, but it makes up for this to some extent by the slanting device generally used by means of which the teeth can be set at any angle. As a rule, the heavy harrows are adapted to the heavy soils and the light harrows to the light soils. The harrow should follow the sub-surface packer or if such a machine is not used,



Lansford Flouring Mills

it should follow the plow in order to form the dust mulch as soon as possible (this is not necessary on the heavier soils of the Red River Valley). Should heavy rains come in the autumn later on, the harrow should be used again to break up the soil crust.

In the spring as soon as the land is fit to work, the harrow should be used to break up the crust that always forms during the winter and thus save soil water, warm up the soil, make a mellow seed bed, and start annual weed seeds. Thoro harrowing in the spring before seeding, pays well for the labor expended with but very few exceptions. After the grain has been seeded a week and before any of it is up, it should be harrowed again to kill annual weeds, such as pigweed, mustard and French weed, if any of these weeds are present in the field. On firm heavy soils, the harrow can be used to very good advantage until the grain is four to six inches high, if care is used not to drag the grain just as it is coming up. Care must also be used to use a light harrow or to slant the teeth back so as not to pull up the young grain plants.

This work should never be done when there is a heavy dew on the grain or if it is wet from any other cause. The harrow should not be used on grain after it is up on light soils, as it is bound to go in too deep and injure the roots of the grain.

For such soils as these, there is no better implement known than the weeder. This is a machine that has a long slightly curved spring tooth, the lower six inches is round, about three-eighths of an inch in diameter, and pointed. These teeth are generally carried in three rows on a steel frame, which is carried on a light truck. Two horses will easily handle a twelve foot machine and go over twenty-five to thirty acres in a day. The teeth can be set so that they will just scratch the ground or they can be pressed in three to four inches deep. This machine should be run over the grain fields after the grain is up and set so as to form a good dust mulch and at the same time not injure the grain roots. Probably there is no better way of combating annual weeds than the liberal use of the harrow and the weeder in the spring. Such cultivation causes the seeds of kinghead, pigweed, buckwheat, pigeon grass, French weed and mustard to germinate more freely and the later use of these implements kills the young plants. The very worst infested fields of mustard can be cleaned in three or four years, if these machines are thoroly used and the few plants that escape are pulled by hand when in blossom. At the same time the land will yield much better crops due to the firming of the sub-soil, and the dust blanket formed, which thoroly conserves the soil moist-

ure for the use of the growing crops. The liberal use of these machines saves soil moisture for the crop in two ways; it prevents surface evaporation by means of the dust mulch and it destroys vast numbers of weeds before they are large enough to draw upon the supply of soil water, which is so necessary to have in order to secure a maximum crop.

NORTH DAKOTA SETTLER SELLING TREES

Among the homesteaders who made final proof on their land at the local land office yesterday was Samuel Brunsch, who lives in southeastern Morton county, who has ten thousand growing fruit trees and hundreds of plum trees and a large number of three-year-old walnut trees on his claim. All of the trees were raised from seed and he is doing a thriving business in selling trees to his neighbors. Brunsch was formerly a mechanic in Chicago and seven years ago decided upon a change and came to this state where for two years he worked as a farm hand and whatever he could get to do. He was married after coming to the state and to his wife is due a great deal of his success. He has improved his farm with buildings, and has a large part of that not devoted to tree growing under cultivation.

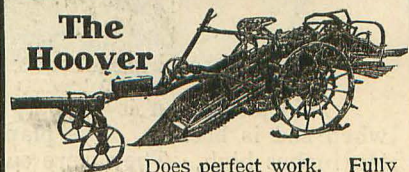
Mr. Brunsch stated that he was, in the near future, going to take a trip to Chicago and try to induce some of his former friends to leave the city and take to the "tall grass" where they will be better able to make a good living. He says that tho he has worked harder while he has been out here and has paid no attention to the "eight-hour law" he is in better health and in every way better satisfied with life than he was while living in a crowded city.

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GRAND 5-YEAR OFFER, PAGE 20

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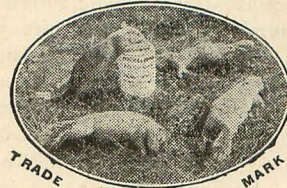
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"Kill-Em-Quick" Fly Poison and Hanger. For home, office and business establishments. Kills millions of flies. 10c worth Fly Paper with hanger, 10c.

"Kill-Em-Quick" Brand Fly Spray. Kills flies, mosquitoes, insects and keeps them away from horses, cattle, hogs and other livestock. In quarts, 50c; gallons, \$1.25 each. Special prices on quantities.

"Kill-Em-Quick" Brand Sheep and Cattle Dip. Kills disease germs, insects and vermin. Remedy for hog cholera, scab, mange and various diseases of sheep, horses, cattle, hogs and other live stock. Complies with all requirements for official dipping. Invaluable for household uses. Disinfectant. \$1.35 a gallon. Special prices on quantities.

"KILL-EM-QUICK" ALWAYS KILLS.

Sold by druggists and drug dealers. In case none in stock, accept no other, but have "Kill-Em-Quick" ordered for you. If unobtainable, send us your order, (giving name of druggist or drug dealer) and remit for such quantity as desired.

Mickelson Kill-Em-Quick Co.,

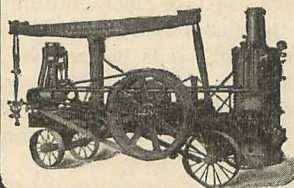
L 1421 Washington Ave. N., Minneapolis, Minn.

it may be well to dwell a moment upon the value of this crop for the state. The Secretary of Agriculture in his report for 1907 states, "Further extension of alfalfa growing on large areas, * * * is a prize that will be worth hundreds of millions of dollars yearly; and it will be won." In 1891, Kansas was growing only 34,000 acres of alfalfa. Today she has under cultivation 1,000,000 acres of this wonderful plant; and she has only fairly started in the cultivation of alfalfa. Never again will Kansas be spoken of as "bleeding Kansas." Droughts, and storms of hail and of locusts may occur but her *alfalfa* crop is an abiding source of wealth, more valuable than government bonds. The alfalfa crop of Kansas is certainly worth to that state \$10,000,000 annually over and above any other crop that would be normally grown in its stead. If then, alfalfa is of such great importance to Kansas, why may it not become of equal comparative importance in this state? It certainly may and it will. But time will be required. At the present time, perhaps there are not more than 500 acres of alfalfa under successful cultivation in North Dakota. Under normal conditions of farming, and it is only the truth to state that the present conditions of farming are abnormal, North Dakota should be growing 2,000,000 acres of alfalfa. This would mean but 30 acres of alfalfa to each section and there is no doubt in the mind of the writer but what there is this much land available for the crop.

The cultivation of such an area would add many millions of dollars to the wealth of the state. In addition, there would be a greater sense of security in the status of the state. A business firm may be doing much business but its methods may be questionable and its paper subject to discount. It has not the security and integrity of a stable concern. The same thing may be applied to methods of farming. Pure grain farming is a sort of a gambling proposition and it is a part of history that where grain farming has been conducted to the exclusion of other methods, that the profits from such a method have gradually decreased until they reached the vanishing point and farming has been conducted at a considerable loss.

One of the very important things at the present time is to awaken an interest in alfalfa in the minds of the farming public and bring vividly to them a sense of the value of the crop. This can be done in a measure by the experiment stations. The stations will conduct experiments with alfalfa and they *will also serve as centers* of inspiration for the work. Farm papers also will be of the greatest importance in spreading information and interest regarding the

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R. R. HOWELL & CO., Minneapolis, Minn.

JACK PINE PLANTATION

(*Pinus divaricata*)

This photo shows part of the experimental plantation designed and established by B. E. Fernow when chief of the Forestry Division, U. S. Department of Agriculture. Many different species were planted, but Jack Pine did best of all.



This plantation is on very sandy land, where the sand drifts when sod is broken. The plants, when set, were seedlings about ten inches high. They were supplied by

H. B. AYERS, of Kimberly, Minn.,

who now has a nursery devoted exclusively to the propagation of Jack Pine for prairie planting.

cultivation of alfalfa. The North Dakota Farmer, for instance, has already devoted much energy and space to the discussion of alfalfa. This organ has perhaps done more to interest the farmers of the Dakotas in alfalfa than any other single agency, unless it be the United States Department of Agriculture.

AN IMPORTANT REPORT

The third annual report of the Superintendent of the Demonstration Farms for North Dakota is just from the press. The first paragraph which reads as follows will give a good idea of the report: "The report includes data of twenty-one demonstration farms, six of which were established by the station in 1906, located at Beach, New Salem, Bismarck, Ross, Granville, and Lakota; six of which were established in 1907, at Bathgate, Page, Larimore, Flaxton, Carrington, and Sanborn; and nine of

will yield a much larger return than the whole farm does where grain only is grown, as on the average farm."

This is certainly good news as the yields of wheat of this state are now in the neighborhood of twelve or thirteen bushels, and if they can be increased to over twenty it will more than double the profits as it takes the first ten or twelve bushels to pay for the labor, etc. concerned in producing a crop and what comes above this amount can be credited to profits. Another very important thing about the results secured is this that they come from the different parts of the state and are worked out under actual farm conditions so that the condition under which almost any farmer is working has a demonstration farm and the data worked out will, therefore, be applicable to that section.

In summing up the yields the following statement is made: "On the six original farms started in 1906 the wheat averaged $26\frac{1}{2}$ bushels per acre machine

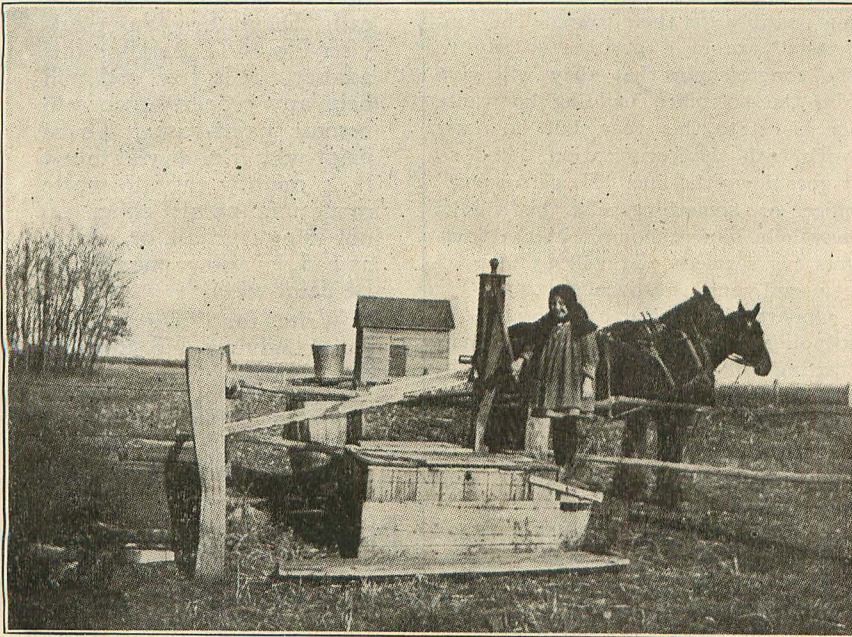
it was all winter killed. At Rugby it was all winter killed on summer fallow, but that planted in stubble will give about a three-fourths stand. Clover has in most cases come thru well, except at Flaxton. It has also been demonstrated that the soil needs inoculation. Alfalfa has in all cases come thru fairly well, some stands are very good."

This valuable report can be had by writing to the Agricultural College, Fargo, N. Dak.

NORTH DAKOTA'S OPPORTUNITY

Extracts from an address by G. H. Maxwell, of Chicago, at Grand Forks

The test of wealth should not be measured in the size of a man's stack of dollars, but on his standard of citizenship. The splendid citizenship of North Dakota is its greatest asset. Talk about your cold weather here. Why, it's your delicious, invigorating climate that makes a vigorous manly man of you, or your ozone and your possibilities, natural and otherwise combined, or something else, for North Dakota has a citizenship that many states might well envy. And you have the richest soil in the world. What was it? Four hundred millions of dollars' worth of products raised in North Dakota last year. You have undoubtedly the Greatest Wealth of any State in the union per capita. But let me tell you: Soil deteriorates; soil wears out. Districts that in past history were veritable gardens of wealth are but deserts today, and abandoned to coyotes because the soil was robbed



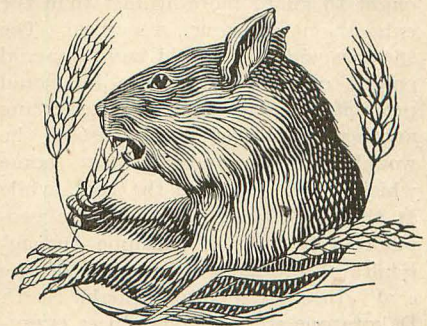
A Young Helper on the Farm.

which were established in the spring of 1909 at Hazelton, Washburn, Jamestown, Wahpeton, Portland Jct., Hoople, Starkweather, Rugby and McLeod respectively." A little further along the following statement is made: "The demonstration farms indicate that any farmer can grow an average yield of wheat exceeding twenty bushels per acre with ordinary farm tools, such as he is now using, if he will keep enough stock to eat up the corn produced on one-fifth of his land and the hay and oats produced on another one-fifth. This stock will produce enough manure to fertilize at least one-fifth of his land each year, if applied at a moderate rate. In this way three-fifths of the farm is in marketable grain crops, which, if properly tilled,

measure. On the six started in 1907 the average yield was $22\frac{1}{4}$ bushels, while on the eight farms started last spring the average yield was $14\frac{1}{2}$ bushels. The average yield for the state was about thirteen bushels so that by using a rotation it has been possible in three years to double the yield. In 1907 the hard wheats outyielded the macaroni by two bushels per acre. In 1906 the macaroni outyielded the hard wheats by $5\frac{3}{4}$ bushels. In 1908 by $2\frac{1}{4}$ bushels and in 1909 by $9\frac{1}{2}$ bushels."

W. R. Porter, who is Superintendent of these farms, gives the following report for this spring: "Winter wheat which was tried on eight of the twenty-one farms has come thru in fairly good condition, excepting at Flaxton where

CHEAP INSURANCE



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"Woodlark" Squirrel Poison is the most reliable and destructive agent yet devised for the extermination of Gophers, Squirrels, Sage Rats and Prairie Dogs. It is the cheapest insurance against their ravages. Every kernel is warranted to kill. Climatic changes or moisture of the earth do not destroy its strength. Requires NO MIXING OR PREPARATION. Is always ready for use. No other is so good. Dealers will refund the purchase price if not as claimed. Pamphlet free. HOYT CHEMICAL CO., Portland, Oregon

of its riches. If you keep on taking the good from your North Dakota soil it is only a question of time when your fair state will be wealthy no more.

In looking around to get some information about North Dakota the speaker secured a copy of The Herald's silver anniversary number, and among other things he found that one-third of the state approximately is underlaid with lignite coal—hundreds of millions of dollars' worth of it. The first thought of some people knowing it was there would be to "let's dig it out and get the money."

You have out in the western part of the state the so-called "bad lands" in which the coal has been dug out, or rather burned out, and you might have even less than you have in the bad lands if you once dig the coal out and ship it out of the state. Your mineral wealth will be exhausted and gone.

The people of Virginia City thought at one time they had an inexhaustible supply of mineral wealth, but Virginia City is today but an abandoned camp—its mines worked out and gone. The same is becoming true of Nevada City and other mining centers.

The forests of this country are being devastated at a rate that means their utter destruction within a few years. What we need of all things is to keep our wealth and reinvest it—our natural wealth. If the wealth shipped out of Nevada by train loads had been reinvested there and used in building up the state Nevada would today be one of our greatest of states instead of having a paltry forty thousand population all told.

Is there anything North Dakota ought to guard more against than the exhaustion of your resources? The speaker said if he could have imperial powers over North Dakota he would prohibit the state from ever exporting another pound of coal. Instead he would establish industries at home which would consume the coal, while at the same time bringing more people to the state to consume our agricultural products—and some of the coal. In short, he would make North Dakota one state that produces everything the people need to eat, to wear and to live. The speaker went into a Grand Forks grocery before coming over to the meeting and inquired casually if we raised any pigs in North Dakota. Receiving a prompt affirmative reply he attempted to purchase some North Dakota bacon, but was met with a blunt.

Haven't got it."

"You have some bacon?"

"Yes."

"Well, where do you get it?"

"Buy it of Armour & Co."

The bacon proposition was followed by an inquiry as to raising beef in North Dakota and an attempt to buy some chipped beef.

"North Dakota? No not."

"But we can sell you Armour chipped beef."

An attempt to buy North Dakota lard also resulted negatively and the speaker was somewhat adversely impressed with the proposition that North Dakota actually does raise pigs, but has to send them to Chicago to get the lard fried out and buy it back again.

The speaker remarked that so long as North Dakotans persisted in paying tribute to the beef trust by sending their products to Chicago to try out the lard and tallow the beef trust was sure to get them both coming and going. You can't put the trust out of business by electing anybody to congress. What is it the people want most of congress? A postoffice building possibly for their town. The "interests" are in a position to say to the congressman that they will give him the postoffice building he wants for his state this year, but he must work with the organization. And so it goes down the line. He gets a postoffice or something, else he thinks may help him at home, but the trust gets his services and will as long as you send your lard to Chicago.

Opportunity in North Dakota lies in stopping economic wastes. The man starting a factory must figure on looking out for waste in every department. P. D. Armour once said that the Chicago packers made money by using everything in a pig but the squeal." The speaker declared that by developing the resources of North Dakota as they may be developed they could put the packers out of business here, squeal and all. He declared that the state has the goods, has the climate, has the soil, has everything to do it with, except—just what we want—more people to do it with and can get them if we give them something to do.

North Dakota Power

The reason many factories have in the past left the towns where they originated and "hiked" to the cities is because there they have an opportunity to get power cheap by "coupling on" to established electric power or other power. This condition can easily be changed in North Dakota to bring the factories from the city here by utilizing the stored up electrical energy beneath the soil of a large portion of the state. It has been demonstrated that electric power can be produced at our lignite mines at a nominal cost which can be wired easily one hundred miles and perhaps

A Fifteen Minute Course in Paint Economy



THE first lesson in paint economy is to use pure white lead, guaranteed by the "Dutch Boy Painter"

trade mark, with pure linseed oil, in all painting, exterior and interior.

¶ The second and third lessons and several more, but all short and easily learned, are contained in the collection of booklets which we call "Dutch Boy Paint Adviser No. 38." Ask for this adviser. It is free and will help any property-owner to become paint-wise. To be paint-wise is no trivial thing. It is mighty easy to waste money in paint; either by not using it at all, or, nearly as bad, by using poor paint. Be paint-wise.

¶ Write for "Dutch Boy Paint Adviser No. 38" today. Free.

Our Pure White Lead ("Dutch Boy Painter" trademark) is now packed in steel kegs, dark gun-metal finish, instead of in oak kegs as heretofore.

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MYERS SEWING AWL

Many of our readers have already taken advantage of our special premium offer found on page 2 of this issue. This offer is liable to be withdrawn at any time. These awls cannot be bought for less than one dollar, and yet this awl is given as a premium for simply one two-year subscription or two one-year subscriptions.

GROCERIES

Buy at wholesale and save money. Write today for free catalog 103. GRIGGS & CO., ST. PAUL

farther. If you utilize the coal you have at your doors for power purposes you have unlimited power to sell. If you use it in developing and manufacturing products of your soil, you double the value of your soil at the same time. If you insist that canned food stuff is the thing, why, sell it instead of buying it. Utilize your soil in producing the raw material and let the cities buy your canned goods instead of your sending to Maine for canned corn and carrots.

You don't need to say that you cannot can vegetables here. The speaker at this point held up to the view of his audience sundry cans of corn, peas, tomatoes, carrots, beans, and other products of this section which he explained were canned just across the street from the meeting place and those who had sampled the products had acclaimed them equal to anything anywhere.

Right here we can raise the cheapest food in the world in this direction. And yet North Dakota is literally sending millions of dollars annually to Maine and Massachusetts for canned corn and tomatoes and other stuff which we can raise and manufacture to perfection in the territory tributary to Grand Forks.

The speaker referred to the lack of an adequate supply of wood and timber in North Dakota, but protested that the rich soil of this state would in a few years grow a supply of timber of marketable size.

The speaker referred to the inexhaustible supply of fire brick clay, of pressed brick clay, and of pottery clay in North Dakota, and asked casually what North Dakota was going to do with its pottery clay, for instance. He then displayed samples of pottery ware from four of the leading potteries of the world, which he had found in a Grand Forks store. Why not manufacture pottery in North Dakota? We need people who know how to do it, but we do not need to start in on an extensive scale. The celebrated Stanley ware and other wares from New Britain, which may be seen among the exhibits at the auditorium, is the outgrowth of a one-man factory of cowbells and sleighbells started at New Britain. Start little factories in North Dakota of things that can be consumed here, and fool the railroads out of some of the two-ways freight and the trust out of some of its prey. Let's have a vision. Let's build for the future. Let's start these things. Why not begin now?

Holding up a wash board to the view of the audience he wanted some one to figure out how many women in North Dakota had been carried to

More Horse-Power for Every Horse
—will reduce your working expenses. Such economy is all the more commendable because it entails the use of a perfect collar.

ZENITH

Horse Collars

—are better fitting, more economical, stronger than others. They outwear all ordinary collars.



Made of best leather—the centre cut of the hide. Throat stuffed with 40-inch hand-flailed rye straw; rims with 12-inch rye straw; bound with our "Patent Lock-Stitch Rib-bon Thong" stitching; reinforced with two thicknesses of leather at throat.

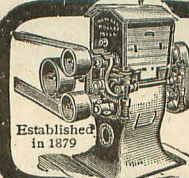
Zenith Collars are built to fit the horse's shoulders absolutely—to bring the pull right where it should be, on the draft muscles.

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The only scientific and up-to-date method of grinding feed. Burr and stone mills have had their day. At present cost of land and labor you can't afford to feed whole grain—one-half of it properly ground by our roller process has equal value. Our mills have great capacity—require little power—last a life-time. Built in 13 sizes to suit any power. Write for catalog D 6

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premature graves from bending over washtubs when it wasn't necessary. The boys leave the farm because there is no stimulus for them there, no work to which they may devote their minds as well as their bodies. Don't ship your coal away for others to get the good thereof, but use it yourselves and bring the dollars from the products thereof into the state as well as from the coal itself.

The speaker had gone into a store to buy some beans and they had promptly placed a can of "Boston" beans from Cincinnati before him. He had investigated a little farther, however, and discovered that we actually do raise beans in North Dakota. He

brought some of the beans along to the meeting as proof of his statement. He couldn't see for the life of him why we have to send to Cincinnati when we want beans for dinner. The grocer, sells the stuff, however, because the people insist on having it and not because he wants them to have it. It isn't the grocer, either who is making the high cost of living. A case of "cream of wheat" for instance costs the grocer 12 7-9 cents a package and sells it for 15 cents. You pay 8 3-4 cents a pound for it. After exhibiting a package of Cream of Wheat he showed the audience a ten pound package of wheat grits—the very same thing—but manufactured in Grand

a pound. The ten pounds of Cream of Wheat costs us 38 cents more, but we buy the cream of wheat and charge up the difference to the "high cost of loving.

The speaker said that unless they went out and started a home campaign little good would come of the suggestions he had made, but by uniting forces and enlisting the assistance of their fellow citizens a movement could be started right away that would mean millions to North Dakota within the next few years thru the development of its resources. He declared that if North Dakotans would invest all their surplus capital in the development of the state's resources they could own the Great Northern railway within a dozen years, Start right now. If every hardware man will go right home and get together a few

AT THE AGRICULTURAL COLLEGE

In a recent issue of the Orange Judd Farmer, J. A. Powers of Richland County, N. D., has an article on "Profits in Farm Animals." He states that he aims to get the most of the growth on grass and finishes them for the market on ground barley, oats, bran, oil-cake and corn, with plenty of good hay. He uses the best bred cattle he can secure.

W. R. Porter, Supt. of Demonstration Farms, reports that alfalfa is ten inches high at Bismarck and six inches at Beach. Warden Hellstrom of Bismarck is sowing fourteen acres of alfalfa on the strength of the success on the demonstration farm. He also reports clover doing well.

Prof. Richards reports that there have been 1,650 applications for licenses un-

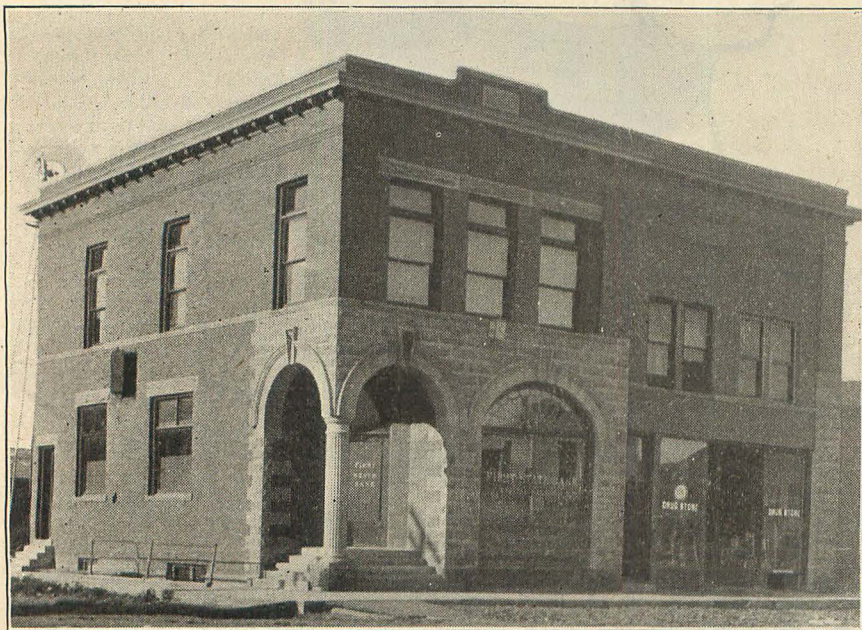
other sections claim their potatoes to be Porks and for which we pay 5 cents North Dakota grown. He also speaks of the fine preparation that the growing of potatoes makes for the following crop of grain; in many cases doubling the yield.

Prof. G. W. Randlett, Supt. of the Extension Department, has just sent corn to twenty-eight county superintendents for corn club work, and there are yet two counties to be supplied. Last year he had twenty out of the forty-five counties engaged in this work, and 5,000 students taking part. Illinois had about 1,100 students and only two out of the 102 counties organized. Iowa had 4,400. Indiana and Ohio had each 5,000. This shows that the work which is comparatively new here has developed very rapidly.

Registrar A. H. Parrott is in receipt of a letter from the New York State Board of Education stating that the B. S. degree offered by the North Dakota Agricultural College is satisfactory in any of their courses requiring a B. S. degree as entrance.

Supt. T. A. Erickson of Douglas County, Minnesota in his last annual report states: "Mr. Lanxon's practical knowledge of farming is fast gaining a respect for this department, and farmers are turning to him for suggestions and inquiries. Mr. Lanxon is a graduate of the North Dakota Agricultural College '09."

The School of Traction Engineering will open its fourth summer session June



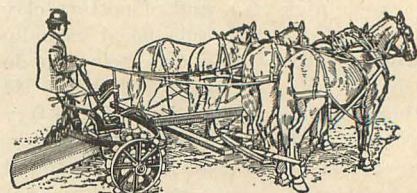
First State Bank, Lansford, N. D.

of his neighbors he can start a home improvement club and a few of these by concerted action can do wonders for the state. Establish rest rooms in your towns so that farmers' wives can be made a little more comfortable when they come to town than they would be at home pouring over a Sears-Rowebuck catalogue. Give the farmers and their wives and boys and girls access to your town libraries and in every way make them know you have an interest in them and that the town is as much theirs as your. The development of your town will add to the value of the farms and by going at it right you can secure and hold the co-operation of your farmer friends.

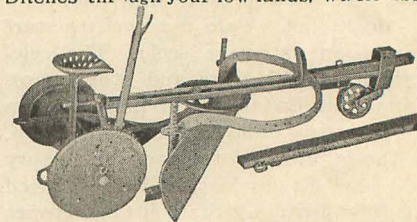
GRAND 5-YEAR OFFER, PAGE 20

der the new stallion law. Temporary licenses are issued. About May 1st veterinary examinations will be held at different parts of the state. After the examinations a one-year license will be granted to those that successfully pass the examination, which is the most exacting of any state in the Union. A horse under ten years of age must be re-examined in three years. The examiners have been selected by the board for their reputation and integrity. The law is being complied with very freely, in fact, stallion owners seem anxious to do so.

The success of the Red River Valley potato growing is brought out in a recent article by F. L. Letty in the Orange Judd Farmer. He states that their quality is high and that growers from



Edwards Rural Road Grader and Ditcher
will do your Township Road Work and make Ditches through your low lands, wt. 1000 lbs.



Edwards Modern Road Grader and Leveler.
A General purpose Road Grader, Road Leveler and Irrigation Land Machine. wt. 600 lbs.



Edwards Stump Puller--3 Sizes Made.
Three Machines that will please where others fail, the prices are right for you to buy. **Shipped on Trial, Guaranteed the Best.** Send for Catalog--tell about your work.
C. D. EDWARDS, ALBERT LEA, MINN.

6th and will close July 2nd. It will take up a very thoro study of the steam and gasoline engine. Any one who is interested in this should write to Prof. C. I. Gunness.

Press bulletin No. 35 by Prof. C. B. Waldron takes up the growing of trees and shrubs for the school grounds.

Professors G. W. Randlett and H. F. Bergman went to Minot Friday evening to attend the Northwestern Educational Association. Dr. Bell was to give a lecture illustrated lecture on "Birds," but being confined to the hospital Prof. Bergman will give his number on the program.

Prof. Doneghue is enlarging the plant breeding work. He will begin work on breeding peas and soy beans, and new varieties of corn will be introduced. The ear-row method will be used i. e. one-half of the selected ear will be planted in a row by itself and the rest saved. Notice will be taken on each row as to growth, yield and diseases. The second year the remainder of the corn from the ears that have been proven best will be planted where they can be bred pure. The work on wheat, oats, barley, alfalfa, clover, buckwheat and millet will be continued on the cent-gener plan.

Prof. A. F. Schalk of the Bureau of Animal Industry who has been stationed at the Pathological Laboratory in Chicago has been elected to take the Department of Comparative Physiology in the Veterinary College. He is already taken up his duties. He will also assist in experimental work.

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Portland, June 6-11, 1910

\$50.00 for the round trip, return limit 3 months. Tickets on sale May 28 to June 3, inclusive. To Spokane, Seattle, Tacoma, Portland, Vancouver, Victoria and many other Pacific Northwest points. Regular Summer Tourist Fares effective June 1 to September 30: \$60.00 for the round trip return limit October 31.

¶ Several through electric-lighted trains daily. Drawing-room Sleeping Cars, leather upholstered Tourist Sleeping Cars and Comfortable Coaches. Dining Cars a la carte for all meals—cuisine famously good. ¶ Write to A. M. CLELAND, General Passenger Agent, ST. PAUL, for dainty illustrated book about the Rose Festival, free. For information, call on or consult your LOCAL AGENT

Yellowstone National Park Season, June 15 to Sept. 15, 1910

Stop off at Spokane also, and see Hayden Lake

Graders are at Work

On the C. N. cut-off, Fargo-New Rockford-Minot, which will pass about 13 miles south of here. ¶ GRADERS ARE ALSO AT WORK on the Soo's new cut-off, Drake-Devils Lake-Medford, which will pass about 8 miles north of here. ¶ And just this week surveyors are at work on a line to extend this Esmond branch, presumably to Towner. All THREE new lines will run clear across southern Pierce County, which heretofore has had rather inadequate railroad facilities.

Think of Effect on Farm Land Values There!

Seven grain elevators at Esmond, N. D. Proof of the wheat-producing powers of the vicinity. One million bushels of grain marketed annually, in this 8-year-old town. Tributary to Esmond is to be found the cheapest good land in the state of North Dakota. Watch rapid increase of values and prices of farm lands here, when Great Northern cut-off, Fargo to Minot, via New Rockford, is built, as expected, in 1910. Choice improved and unimproved farm lands for sale. For prices and particulars write

STYLES & KOFFEL, Esmond, North Dakota

Why Farmers Should Keep Bees

By M. V. Facy, Supt. Honey and Bee Department
Minnesota State Fair

In treating on Bee culture under this heading I shall confine myself to two main reasons in favor of the presence of bees on the farm either of which give results justifying, beyond our utmost expectations, their presence.

If you ask a beekeeper, in the fall, what his crop of honey for the season amounted to, he may reply, 100 pounds per colony, this represents the first reason and the only reason considered by a great many people; but there is another reason which may also be given which is no mean one and it is the one called forth by the question: How much have your bees increased the yield of your alfalfa or alsike clover or other crops and the farmer will find after he has introduced his bees so they are in touch with these crops that the true answer to this question will be about 50 per cent, or 35 per cent increase in the yield of this orchard,—or in many cases fully 25 per cent with medium red clover besides their benefit in the corn, the buckwheat or the flax crop.

The Honey Crop

We speak of the value of our corn crop or our wheat or the extent of our poultry industry and yet there is without any doubt a greater value of honey that goes to waste in any good honey year than is represented by either of these crops or industries. Cattle or hogs or sheep or any other livestock require the use of land for their pasture and the use of other land to produce the fodder and grain for their winter sustenance. Bees in gathering their crop and storing their surplus spend their time in gathering a product which only goes to waste in their absence.

We have a good deal to say about the profits of farming but, taking it one year with another, I clear more money from the proceeds of 100 colonies of bees than the average farmer clears from a quarter-section of land. I can safely count on an average yield exceeding 100 pounds of honey per colony and last year my bees averaged over 100 pounds a colony from alsike clover alone and one of my neighbors had a yield of 160 pounds of honey per colony from alsike. He is a farmer who the past season sold over \$150 worth of honey from 12 colonies. As he is getting these results year after year, tho a *successful farmer*, he has decided to make bees more of a speciality in his work in the future.

Every person will not secure such re-

sults. I said in my last article that every beekeeper should be a thinker, he must also attend to the details of his work as well as be abreast of the times in his methods. The careless man may meet with a meager success in grain-growing and in some departments of stock-raising but seldom with bees. To illustrate this I will quote from my own experience. A few years ago a farmer near Mabel, Minn. sold his bees to me—27 colonies—except 3 of the best colonies which he reserved for himself. He had heard of my success with bees but thought report exaggerated it so he challenged me to compare results at the end of the season. He believed in the natural swarming of bees and intended to produce comb-honey by following the older systems of beekeeping. I moved my bees to the farm of a friend near Mabel. I produced extracted honey and with 9 days work secured a yield of over 3000 pounds; besides this I sold \$100 worth of bees and had more bees remaining than I had in the spring. The three colonies retained by the person I bought the bees from doubled in numbers by swarming but refused to commence work in the supers hence his crop of honey was nothing. He had kept track of my bees, and the results from them, thruout the season and frankly acknowledged the reasons of his failure. Had this man followed the same system of beekeeping as I followed he would have doubled his colonies and secured a crop of not less than 600 pounds of extracted honey with a less amount of labor. This is not an exceptional case. The party spoken of above who produced 160 pounds per colony last summer from alsike clover formerly handled his bees as his forefathers did and received an average of about 20 pounds per colony; having learned to handle his bees properly he produces from 100 pounds upwards without interference with any of his farm work. One beekeeper may secure a yield of only 20 pounds per colony a season; another in the same locality may receive 40 pounds; another 60; and another 100 pounds and the only reason for the variation is the way of handling the bees. I have found a yield of 100 pounds or over of clover honey possible almost anywhere, if conditions are favorable, as an average yield; I know, from my actual experience with farmers' bees, that their returns exceed those of the specialist whose bees occupy more extensive yards. There is nothing on the farm that can show those results,

with so little labor, but they are only available to the right kind of person. The person who is going to neglect his work or its details or who fails to make the proper use of his mind had better not invest in them as he will thus avoid disappointment.

I have as yet only given what we may call the direct profits of bees as represented by their honey yield. The consideration of these alone should make a few colonies of bees a valued addition to the farmers' interests and yet there is another source of income connected with them, indirect it is true, but of no mean value. Many flowers in the vegetable kingdom require the assistance of wind, or insect or other agencies to effect pollenization. Some plants like the clovers are almost barren without the influences of these agencies; hence the first crop of the common red clover, coming on before bumble bees have increased to be much of a feature in its pollenization and being invsited by the honey bee, scarcely yield any seed while the second crop having a slightly smaller flower being visited to some extent by the bees and freely by bumble bees yields our crop of seed.

The presence of honey in flowers is one of the provisions of nature to draw honey-loving insects to them, who by their visits greatly assist in the pollenization of the flowers. As bees gather both pollen and honey they are more effective than visitors who live on honey alone. A beekeeper of New York, Mr. Alexander, Delanson, N. Y., now deceased, used to keep about 1000 colonies of bees. They were located in a locality where the principal crop was buckwheat. The effect of the visits of his bees was so marked that the threshers could tell at once, when they reached the buckwheat visited by Mr. Alexander's bees, by the increased flow of the seed. Most of our Fillmore County Beekeepers Association are farmers and at our annual meeting held late last fall the benefit of bees to alsike clover in increasing the yield of seed was taken up and the farmer members reported an increase of yield of alsike clover seed of 50 per cent, thus doubling the crop over that produced outside the reach of the bees. The increase of alfalfa seed due to their presence is equally as great as with alsike. Other clovers also are benefited and the seed yield increased in proportion to their presence.

In experiments made with fruit crops the increase has averaged about one-third. Their visits to the corn and flax crops while in bloom no doubt is of very material benefit but to what extent has not, I believe, been ascertained. These are some of what I have classed as indirect, I should have said direct, benefits of bees; how important they are may be seen at a glance.

AMONG OUR ADVERTISERS.

Removed Spavin—Thinks It the Best Blister

I used Gombault's Caustic Balsam for bone spavin with the best results. The spavin is gone and the mare is sound. I think it is the best blister in the world for bunches of any kind.—H. E. LILLY, Wayne, Kans.

McGill & Co. of Fargo, who have an intimate knowledge of the requirements of shipping, offer the following suggestions to those who may wish to ship potatoes:

A thru rate on car lots can be obtained from any point in North Dakota to any shipping center.

All potatoes shipped at this time of the year must be loaded in refrigerator cars.

The stock must be free from dirt and scab, and running in size from one and three-quarter inches up.

Leave out all the small potatoes, and marbles. They make good feed. We do not advise their use for seed purposes.

See that no sun-burned stock is shipped.

Cut out all large sacks. Use even weights of 90 or 100 lbs.

Do not load in leaky cars.

Place sacks on end. Leave six inches between sacks and side of car.

Lay sacks of second tier flat, to tie lower tier.

In freezing weather car should be heated, and if weather is at all cold send man along, with oil heater in car.

From Oct. 1 to May 31, 30,000 lbs. makes a carload, from June 1 to Sept. 30 a car load is 4,000 lbs. When the car is loaded, wire or telephone the consignee, give him the car number, initials, and weight. Then mail him the bill of lading and manifest to the consignee. The bill of lading should show car number, weight, and how car is routed. The consignee will telephone or wire you how to ship.

The shipper should be assured that his consignee is reliable. Look up the standing of the house you are dealing with in Dun or Bradstreet, or ascertain its reliability thru your local banker.

FARM PESTS

Those pests, the little gophers, are beginning to be active again. Those who would rid themselves of these little robbers, who destroy five times as much grain on a quarter section as the family consumes, will find among our advertisements two poisons, "Kill-Em-Quick" and "Woodlark Squirrel Poison." We strongly advise quick action.

Used 10 Years, Greatest on Earth for man and beast.

Middle Hainesville, N. B., June 21, '09.
DR. B. J. KENDALL, CO.
Dear Sirs:—Enclosed find two cent stamp for which please send me your Treatise on the Horse. I have used your Spavin Cure for ten years and find it the greatest medicine on earth for man and beast.

Yours truly,
Sherman Jones.

LITTLE MISS FALES

This is the story of the success gained by the good-humor, pluck, and native wit of a little girl who was named John Fales, because she should have been born a boy. Her home was with her widowed mother, who was not at all well-to-do, altho her relatives were wealthy. There are glimpses of foreign travel, but the main course of the story is at home, where Little Miss Fales brought about a family reconciliation and developed the best side of her cousin, a boy of her own name. Then comes a piece of good fortune to her, and a most exciting turn to the story.

Little Miss Fales as a story has a winsome quality that makes it that rare thing—a thoroly satisfying book for girls. By Emilie Benson Knipe and Alden Arthur Knipe. Published by Harper & Brothers, New York. Price \$1.25.

ROSES ARE RED

And Beautiful, Too

Northern Pacific Displays Them to View

Fresh from the press in daintiest dress comes a book that is pretty to see. With paper and ink to make the eyes blink, the rose is extolled to a "tee". The N. P. has printed at an outlay unstinted, a book of the Portland Rose Show which will take place right soon, in the fore part of June, and the book makes one eager to go. If you wish one addressed to you, send your request to the N. P. headquarters today. It's a booklet to save, if the pretty you crave, so write for one quick—don't delay.

NEW PAMPHLET FOR HOMESEEEKERS

The Northern Pacific has issued a new publication entitled, "Homeseekers' Pamphlet No. 1," which quotes the Homeseekers' fares to the Northwest, giving full details with regard to limits, stop-overs, etc., and containing an excellent map of the System, together with a brief digest of the conditions as they exist from the Homeseekers' standpoint in the several states traversed, namely, Minnesota, North Dakota, Montana, Idaho, Washington and Oregon. Copies of this pamphlet may be obtained upon application to A. M. Cleland, General Passenger Agent, Northern Pacific Railway, St. Paul.

TRAVELS AT HOME

This is the first book of its class which has ever been selected entirely from the works of the greatest of all humorists. The Editor says: "It is because his work has such significant human qualities that it is important to open as many small windows as we can for the young upon the wide prospect which Mark Twain's varied work presents. . . . The present volume includes the best chapters gleaned from such volumes as "Roughing It," "Life on the Mississippi," wherein the author records his wanderings in his native land." Price 50c. Published by Harper & Brothers, New York

CLASSIFIED ADS.

LIVE STOCK

HORSES

FOR SALE

Percheron, Belgian and Shire horses
J. W. & F. T. PETERSON, Litchfield, Minn.

MEADOWBROOK STOCK FARM. Clydesdales and Shetland Ponies, imported and home bred. Prices reasonable and terms to suit. Write or come and see me. GEORGE LANG, Mapleton, Minn.

CATTLE

North Branch Stock Farm. High class Short-horns. Herd, bull Supreme Judge 177722—pure Scotch, John Donnelly, Grafton, N. D.

REGISTERED RED POLLED CATTLE

Young Stock of Both Sexes For Sale.
C. G. FAIT & SON, Monango, N. D.

FOR SALE: A fine purebred registered Holstein-Friesian bull one and one half year old, of the famous DeKol and Pietertje families, the best dairy breed in the world.

F. J. STEIDL,
Wheaton, Minn.

FOR SALE

GALLOWAY CATTLE
J. W. & F. T. PETERSON, Litchfield, Minn.

SWINE

POLAND CHINA PIGS, also Shropshire sheep. Seed grain. GEO. N. SMITH, Amenia, N. D.

EGGS AND POULTRY

EGGS FOR HATCHING, Express prepaid, \$2 per 15, from pure bred Golden Wyandottes and White Plymouth Rocks (Fishels strain.) Wyandotte stock for sale. Send for Catalog. C. H. MCGEE, McHenry, N. D.

MISCELLANEOUS

SEED FLAX, N. DAK. NO. 155

Raised on sod guaranteed free from foul seeds or wilt. For sale by

T. K. Tobiason, Kempton, N. D.

Envilla Stock Farm, Cogswell, N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf and Fox Hounds, Fancy Poultry, Pet Stock and Ferrets.

FAIRVIEW STOCK FARM. Breeder of Short Horn Cattle, Mammoth Bronze Turkeys and B. P. Rock Chickens. Young Stock for Sale.
F. R. HAMMOND, Prop., Bismarck, N. D.

FOR SALE Half section well improvde farm 3 miles from town Price \$6000. A snap
Lyon Land and Loan Co., Bowbells, N. D.

North Dakota Farmer

AND SANITARY HOME

Entered as second class matter in the postoffice at
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GOOD ROADS CONVENTION

There is to be held in Fargo, June 22nd and 23rd, a meeting of the Good Roads Association, and it is hoped that much interest will be taken in this important subject, for good roads is one of the first essentials for the development of both agriculture and the industries of the town.

The Commercial Club of Fargo has taken an interest in the matter and it is said that some of the best speakers of the country will be present to assist in the work of the Convention.

PHILOSOPHIES OF LIVING

The Grocers' Magazine, in commenting on the Philosophies of Life, has the following to say:

"Man comes into this world without his consent and usually goes out of it against his will, with the trip between exceedingly rocky.

"When he is little, the big girls kiss him; when he is big the little girls kiss him. If he is poor he is a bad manager; if rich, he is dishonest. If he needs credit, he can't get it; if prosperous, every one wants to do him a favor.

"If he is in politics, it is for graft; if he is out of politics, he is no good to his country. If he does not give to charity, he is stingy; if he does, it is for show.

"If actively religious, he is a hypocrite; if he takes no interest in religion, he is a hardened sinner. If he is affectionate, he is a soft specimen; if he cares for no one, he is cold-blooded. If he dies young, there was a great future be-

fore him; if he lives to old age, he missed his calling."

OLEOMARGARINE OR BUTTER

A strong effort is now on foot in Washington to induce Congress to remove the high tax on colored oleomargarine. Inasmuch as uncolored oleomargarine is not subject to the same tax, why are they so anxious to have the tax removed from the colored product? Assuming that oleomargarine is just as healthful an article of food as butter, why do they desire to color the product when by leaving the color out it is unnecessary to pay this tax?

The color is added for the purpose of making possible fraud and deception. They want to sell the product for butter. The restaurants, boarding houses and other places desire to use it as a substitute for butter or in place of butter on the table, and lead their patrons to believe that they are using butter of good quality. Let the product be sold for what it is. Let it be sold uncolored and not as a substitute for dairy products, but under its true name and there will be no trouble or necessity for removing the tax. As a matter of fact, is it desirable to remove the tax from colored oleomargarine in order that they may drive good butter from the market. Which shall we develop,—the oleomargarine industry for the benefit of a few manufacturers, or the dairy industry which means so much to the success of agriculture of this country; and the success of agriculture which means so much to the prosperity of this country as a whole? If the farmer does not want the dairy industry destroyed or placed at the mercy of the oleomargarine manufacturer, then he should use his influence with his Congressman to see that oleomargarine is sold for what it is and that the tax is not removed.

PASTEURIZING MILK

Of late a great deal has been said as to whether milk should be permitted to be sold in our cities which is not drawn from cows which have been tested and found to be free from tuberculosis. This is a most desirable end to reach, but experience has shown that a large number of herds in every locality in the country contain tuberculosis and the question is raised as to whether it is safe to condemn all such animals and cause their destruction, or whether the milk should be divided into two groups: First, that which is drawn from tuberculous-free animals and the milk sold in the fresh condition; second, that which is drawn from herds containing tuberculous animals and require such milk to be thoroughly pasteurized. For many purposes this milk would be equally as good as

the fresh milk. For other purposes, particularly for invalids and young children, this milk should not be fed if the fresh milk could be had.

Chicago has had this question up recently, viz., as to whether only such milk drawn from tested herds should be sold or whether the milk should be divided into two groups. The Board of Health have strongly recommended the two classes of milk: the fresh drawn from herds tuberculous-free, and the pasteurized milk drawn from animals not known to be free from tuberculosis. This seems to be the most sensible thing to do, and then gradually weed out the diseased animals, rather than to make such a sweeping onslaught at one time.

We must remember that tuberculosis is not the only disease that may be disseminated thru the milk. Typhoid fever, diphtheria and scarlet fever are very generally distributed thru this medium and tested milk would not, therefore, be safe from herds where there were possible contamination of typhoid, scarlet fever or diphtheria germs, but when sterilized these germs would be destroyed.

WHAT IT COSTS TO LIVE

A great deal has been said of late with regard to the increased cost of food products and necessities of life in the United States. It is interesting, therefore, to compare the cost of various products in two cities of about the same size, separated only by an imaginary line, the one in Canada and the other in the United States. For this purpose Windsor, Canada and Detroit, Mich., may be compared.

Commodity	Price in Windsor	Price in Detroit
Butter, best, lb	.28	\$.36
Eggs, per doz.	.34	.42
Beef, cheapest cut	.06½	.10
Pork, mess	.13	.20
Lard, prime	.11	.13
Bacon, breakfast	.19	.24
Wheat, No. 2 red	1.00	1.11
Corn, No. 2 mixed	.60	.78
Potatoes, per bu.	.70	.65
Cabbage, per hd.	.05-.07	.08-.15
Turnips, per bu.	.40	.60
Carrots, per bu.	.50	.60
Rutabagas, per bu.	.35	.40
Beets, per bu.	.25	.60
Parsnips, per bu.	.50	.60
Turkeys, dressed	.20	.25
Chickens, dressed	.11	.15
Milk, per quart	.07	.08
Cheese, per lb.	.11½	.16½
Plug tobacco, per lb.	1.00	2.00
	2.00	3.00

Now Windsor is separated from Detroit by a narrow strip of water and, as someone has said, by the Aldrich-Payne Tariff Bill. Whatever the reason there is a marked difference in the cost of many of the items.

Pure Food Advertisers

The products advertised below are in compliance with the pure food law of North Dakota and of the highest grade.
ASK YOUR GROCER FOR THEM.

“BUY”

“EAT”

HOME BRAND

Pure Food Products

“ECONOMY” “SATISFACTION”

Griggs, Cooper & Co.

MANUFACTURING
WHOLESALE
GROCERS,

ST. PAUL, MINN.

Main Offices:
CORNER THIRD AND BROADWAY

**DR. PRICE'S
JELLY
DESSERT**
NUTRITIOUS-WHOLESOME

One package, 10 cents, makes one pint of wholesome Fruit Jelly. All flavors from true fruits.

BE SURE TO ASK FOR

HIAWATHA or NOKOMIS

Brands

PURE FOOD PRODUCTS

Fruits, Vegetables, Spices, Extracts, Coffees, Teas, Cereals, Sauces, Catsups, Syrup, Molasses, Starches, Saleratus, Etc., Etc. These goods are the

BEST THAT SKILL AND MONEY CAN PRODUCE

Stone-Ordean-Wells Co.,

WHOLESALE GROCERS.

Manufacturers and Importers

DULUTH, MINN.

BRANCHES at Minot, N. D., Billings, Mont., Bozeman, Mont., Butte, Mont., Hancock, Mich., Bismarck, N. D.

MONARCH BRAND



FOOD PRODUCTS

A GUARANTY OF PURITY. A WELCOME GUEST at every table where the HOUSEWIFE demands the BEST. THE MONARCH LABEL insures QUALITY in Coffee, Catsup, Pickles, Maple Syrup, Canned Goods or any article bearing the MONARCH BRAND of REID MURDOCH & CO., CHICAGO.

YERXA
FARGO, N. D.

“The Cash Grocer”

We buy in large quantities, for cash only, for our various stores and can save you money.

Big Store

Big Stock

Big Sales

Small Profits

Cash

“GRANT’S

Candies are

PURE.”

HONEY

Well ripened clover Honey for Sale, guaranteed absolutely pure and of the finest quality. One 30-lb. can 11½¢ per lb.; 2 or more cans 11¢; 12-lb. cans, in full cases of 72 lbs., 11½¢ per lb. Send for price list. Address

M. V. FACEY, Preston, Fillmore Co., Minn

MONEY WASTED

The largest single business that the Department of Agriculture has to do, according to the statement of Secretary Wilson, is the handling of the 40,000,000 packets of garden and flour seeds; the common sorts available in every country-town, many of which samples, as sent out, are worthless, but are still being distributed free to the farmers of this country. It is money thrown away. Even Secretary Wilson is reported to have said:

"As there is no practical object to be gained in distributing this kind of seed, it seems very desirable that some kind of change be made. The fact remains that this work does not accomplish the purpose or end for which the Law was originally framed."

Now the cost of the clerical help in putting up and sending out, the expense to the Post Office Department in handling and distributing these seeds, and the burden of clerical work thrown upon the Congressmen for a little cheap political patronage, is enormous considering the results that come to the people. Why then does Congress persistently vote for a little cheap notoriety and political gain to squander the people's money for purposes of this kind? We venture to say that the actual cost of the seed by the time it reaches the farmer comes pretty near to five cents per package, or \$2,000,000. Now if one-half this sum, or \$20,000 per year were appropriated by Congress to each of the several Experiment Stations to aid in the propagating of new varieties adapted to the locality and conditions of the state, to the improvement of standard varieties now grown, vastly more good would be accomplished in five years than can come in a whole generation with the present system.

Over and over again the agricultural press of the country have called attention to this farce and still for the sake of a few political constituents Congress persists in spending the people's money in this unnecessary way. Only the cheapest kind of garden and field seeds are sent out. My own experience shows that some of the seeds are worthless, even worse than worthless, as they are not adapted to the community to which they are sent. The climatic season, in some instances, would need to be twice as long as we have in this state to enable some of the seed to grow and develop a plant.

Let the Experiment Stations, under the guidance of the Department of Agriculture if necessary, have some means to work with and hold them responsible for the development of something which would be of real value to the people of the state.

TESTING ANTITOXINS

In recent years the use of tuberculin, serums, antitoxins, etc., has become a feature in the treatment of diseases, both of men and domestic animals. As a large number of such preparations have appeared on the market, some being of uncertain strength, and others worthless, Congress wisely authorized the Department of Agriculture to buy samples in the market and test the various preparations recommended for veterinary use, and publish the results.

Among the antitoxins on the market for veterinary use is that prepared for use against tetanus, the disease commonly spoken of as "lockjaw." The animals most commonly attacked by this disease are horses and mules. The fact that many unsatisfactory results have followed the use of such antitoxins has led the Department to test the

preparations put on the market by several manufacturers, both American and foreign, and the results have just been published in Bulletin 121 of the Bureau of Animal Industry. The striking feature of the results is the great variation in the strength of these antitoxins. It should be noted that the antitoxin for use on human beings is required by law to be of a certain known strength, so that the physician using it knows exactly what he is doing. But the veterinary who uses a preparation of unknown strength often fails to save the animal treated.

The tests showed that the "veterinary tetanus antitoxins vary extravagantly in their unit of strength, and some are comparatively weak in antitoxic potency." The results indicate the need for strict Government supervision of such preparations for the benefit of the veterinarians and the live-stock interests of the country.

Livestock Department

PROF. W. B. RICHARDS, Editor

The Fourth Annual Livestock Show of the Northwestern Livestock Association will be held at the St. Paul Union Stockyards at South St. Paul, Minnesota November 15 to 18, inclusive, 1910.

This show is planned without classes for breeding animals and is designed to aid the small feeder and farmer in obtaining knowledge as to what constitutes the best types of animals for market purposes.

Cattle, Sheep and Swine are arranged under two main divisions: 1st Pure Bred 2nd. Grades and Cross bred.

This avoids multiplicity of classes by bringing together all the pure bred in the classes for pure bred, and all the grades and cross bred in the classes for the grades and cross bred, the champions for each class competing for the Grand Championship.

The Premium List contains liberal cash prizes from the Association, and some attractive trophy cups and special prizes from others.

A Special Prize is offered this year for Amateur Exhibitors who have never been in a show with their livestock.

Excellent quarters have been provided for the care of all animals sent to the show, and special features in the way of lectures and demonstrations by leading authorities on Animal Husbandry will be offered for the instruction of those who may attend the show. One excellent feature of this show is found in the system of having the judges give their reasons for placing animals and

awarding prizes. These little lectures by the judges are full of valuable information for the exhibitor and farmer, and it is information that is rarely obtained at any show.

The farmers and feeders of the Northwest can well afford to fit animals for this show, and the experience of those who have been exhibitors in the past shows a very handsome net profit as the prices at which the stock has sold, and the cash prizes won, make excellent returns for the feed consumed in fitting the animals for the show, in spite of the fact that ever since the show was started the price of feed has been high.

It is not necessary for a farmer to be a professional exhibitor in order to win money at this show, and this opportunity for farmers and feeders to increase the knowledge of what is necessary to make good market types of animals should not be overlooked.

The premium list and anything concerning the show may be had by persons addressing the Northwestern Livestock Association at South St. Paul, Minnesota.

HINTS FOR STOCK OWNERS

The chaff and straw get in the wool and injure it.

Do not let sheep run around or eat from straw stacks.

Sheep that have been chased by dogs never do quite so well afterward. Work hard to keep the dogs out.

There is more profit in a grunting pig than in a squealing one.

In some cases it may be necessary to dissolve some Epsom salts in the feed.

Be sure the sows are not constipated. Give roots, fruits and oil-meal in the feed.

There is a great shortage in the hog crop thruout the whole country, and it can only be replaced by keeping the best brood sows and growing more pigs.

You had better scour the feeding pail than lose a calf from scours.

When you hurry about milking, the cow feels uncomfortable and shortens up on you a little. That hurts you and hurts the cow as well.

Some folks get to be pretty good guessers in determining the temperature of cream, but nobody ever came within gunshot of the thermometer in this respect.

The root cutter is almost an indispensable machine on the farm. The life of many a valuable cow would have been saved if the apples and potatoes fed had been run thru a root cutter.

If the feed gets short before the pasture is ready, it is better to buy more.

There is no economy in cutting down the feed at the freshening period.

Grow as much feed as is possible. Get the soil crops in as early as the land will permit. Do not lose a day.

Sow a good acreage of oats and peas. All that is not eaten green can be harvested as oats-pea hay.

Go slow the first days of plowing; it will make a gain in the end.

ST. PAUL UNION STOCKYARDS COMPANY

FOR APRIL, 1910

		Receipts					
Railroads	Cattle	Calves	Hogs	Sheep	Horses	Total	Cars
C. R. I. & P. ...	734	57	665	60	35	43	
C. G. W.	623	692	2388	390	19	70	
C. M. & St. P.	3113	786	8364	576	94	257	
M. & St. L.	1735	478	7337	231	39	173	
C., St. P. M. & O.	2199	471	12651	926	7	292	
C. B. & Q.	179	91	929	57	74	25	
M. St. P. & S. S. M.	2968	1661	4878	1216		195	
Gt. Nor.	6504	2922	11054	1249	1	415	
Nor. Pac.	2832	1119	2036	1356	70	152	
St. P. B. & T.							
Driven In.	895	79	930	408	1		
Total.	21782	8356	51232	6469	340	1622	
Increase.	1423	934				161	
Decrease.			1773	3304	163		
Average Wts.	860	164	226	89			

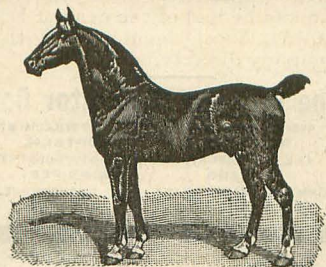
		Shipments					
C. R. I. & P.	836	260			4	30	
C. G. W.	2758	742	3597	532	9	142	
C. M. & St. P.	3383	550	67	165	7	120	
M. & St. L.	330	71		142		14	
C. St. P. M. & O.	2914	1507	121		19	105	
C. B. & Q.	2803	81	612	494		107	
M. St. P. & S. S. M.	376	17	202	52	31	24	
Gt. Nor.	460	205			73	26	
Nor. Pac.	684	247	19	28	56	35	
St. P. B. & T.							
Driven Out.	415	255	159	263	189		
Total.	14959	3935	4777	1676	388	603	
Increase.	78	651		22		6	
Decrease.			5647		201		

		Origin of Livestock Received					
States	Cattle	Calves	Hogs	Sheep	Horses	Total	Cars
Minnesota.	16230	7305	40994	3834	122	1230	
Wisconsin.	976	612	3756	221	27	100	
Iowa.	42				60	7	
Fra South.	122	1		490	88	13	
So. Dakota.	1064	199	2759	306	18	86	
No. Dakota.	2627	239	3723	666		150	
Montana.	690			952	24	34	
Far West.							
Manitoba & NWT.							
Far East.							
Returned.	31				1	2	
Totals.	21782	8356	51232	6469	340	1622	

		Disposition of Livestock					
So. St. Paul Pkrs	6886	5079	46490	7290			
City & St. But.	1009	567	159	165		42	
Outside Packers	44	777	4219			45	
Minnesota.	3709	881	234	546	246	141	
Wisconsin.	2064	325		28	24	74	
Iowa.	3536	950		243		116	
Nebraska.							
Kans. & Mo.	21	3				1	
So. Dakota.	258	128				8	
No. Dakota.	113	4			60	9	
Mont. & West	67	8			36	5	
Far South.	29	4				1	
Manitoba & NWT.	6	2			21	5	
Mich. & E. Can.							
Chicago.	1559	38	165	694		70	
Ills (ex Chicago)	2141	248				74	
Eastern Points	372					10	
Returned.	31				1	2	
Totals.	14959	3935	4777	1676	388	603	

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeney, Capped Hack,
Strained Tendons, Founder, Wind
Puffs, and all lameness from Spavin,
Ringbone and other bony tumors.
Cures all skin diseases or Parasites,
Thrush, Diphtheria. Removes all
Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is
Warranted to give satisfaction. Price \$1.50
per bottle. Sold by druggists, or sent by ex-
press, charges paid, with full directions for
its use. Send for descriptive circulars,
testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

During the first days of plowing the collars should be raised often to cool the shoulders.

A sour manger is the abomination of a really good horse. The man who forces a horse to eat from such a vile place is sure to be the loser, and will sometimes lose the horse with intestinal disorders, including colic.

Wheat bran and oats make strong bones in the colt.

When the colt is dropped it should receive nourishment from the dam within the first half hour.

An attendant should be on hand at the time of birth, for a little timely help has saved many a valuable colt.

A lazy man should never breed colts, for he must be alert and on the job if he wishes to succeed.

Start the milk with the thumb and finger if the colt is not very strong, or if the udder is at all hard.

Take the chill off the water for the mare, and feed her carefully and keep her quiet for a number of days.—Farm Journal.

THE USE OF BACTERIA IN BUTTER MAKING

Walter G. Sackett of Colorado

Those who are engaged in butter making as a profession consider that the two most important factors in good butter making are clean cream and proper ripening. The former can be obtained only by the most scrupulous care on the part of those who are entrusted with the handling and the latter is accomplished best by the use of what is known as commercial starters. These are pure cultures of acid-producing bacteria capable of imparting a desirable flavor to the butter.

The bacteria that are normally present in cream, and in the end find their way to the butter, are in a large measure responsible for the flavor, and if it happens that filth germs dominate, which is apt to be the case in natural ripening, the butter will have a strong, rancid flavor and odor. When the commercial starter is used in ripening the cream, immense numbers of bacteria, capable of producing an agreeable flavor, are introduced; the growth of the undesirable is checked and many of the unpleasant flavors already produced are covered up, so to speak, either wholly or in part.

The cost of these commercial products is so small, and the method of using them is so simple in comparison with the benefits to be derived, that their more general use is to be recommended. The initial cost of a starter is about fifty cents, and by careful handling, it can be propagated for an indefinite period.

Pure culture starters are put up by the different manufacturers in two forms; one, a powder, and the other, a liquid. They are for sale under trade names such as Butter Culture, Flavorene, Pactic Ferment, etc., and can be procured either directly from the manufacturer or thru any drug store or creamery supply house.

SECURING QUALITY IN CREAM

This is the time of year when the creamery men have difficulty in securing first grade cream. The trouble is due both to the way the cream is cared for and length of time it is held before delivering. Often when only a few



THE BEST INVESTMENT ANY COW OWNER EVER MADE

That's what MORE THAN A MILLION COW OWNERS the world over have found the DE LAVAL CREAM SEPARATOR to be, after thirty years of separator use.

A DE LAVAL FARM SEPARATOR costs from \$40.- to \$175. according to capacity. It saves butter fat and produces a cream of superior quality over any setting system or any other separator every time it is used,—twice a day every day in the year.

It involves far less labor than any setting system, and runs easier, has greater capacity and lasts from two to ten times longer than any other separator.

That's how a DE LAVAL separator saves its cost at least the first year, and frequently in a few months, and then goes on doing so right along for an average of twenty years.

Any desired separator information can be had of the nearest DE LAVAL local agent or of the Company directly.

The De Laval Separator Co.

165-167 BROADWAY NEW YORK	178-177 WILLIAM ST. MONTREAL
42 E. MADISON ST. CHICAGO	14 & 16 PRINCESS ST. WINNIPEG
DRUMM & SACRAMENTO STS SAN FRANCISCO	1018 WESTERN AVE. SEATTLE

1910 OFFER

For several years we have been searching for a magazine of national reputation with which we might combine, and in which we might have implicit faith as to its editorial policy and advertising patronage. The Farm Journal, of Philadelphia, Pa., is just such a publication. Its circulation is over 600,000; its class of advertising is beyond criticism. As a general farm paper, it has no superior in the nation. No farmer in North Dakota can afford to disregard our special offer of five years subscription to both the North Dakota Farmer and the Farm Journal, for only \$2.00. Subscribe yourself then pass the word along to your neighbor.

NORTH DAKOTA FARMER FIVE YEARS
FARM JOURNAL FIVE YEARS

BOTH FOR \$2.00

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Free Samples on Request. North Dakota Farmer, Lisbon, N. D.

cows are kept, there is a tendency to hold the cream for several days before delivery, especially during the busy seasons, which often results in cream of very poor quality.

Few people fully realize the value of cooling cream immediately after milking and holding at a low temperature until delivery. When drawn from the cow the temperature is about 98 degrees F., which is ideal for the rapid development of those bacteria that produce bad flavors in the milk and cream. For that

reason, this is called the "critical period" and requires but a very short time to develop enough bad flavors to make the cream grade second or third quality.

But if the cream is cooled to 60 degrees F. or lower as soon as possible after separating and so held, few bad flavors will result. The important thing is to cool quickly and the most practical way for the average farmer to do it is by using water. The average well water is close to 50 degrees F., and if a small vat is placed between the well and the stock tank, so that the water when pumped will run thru it, fresh cool water may be kept around the cans. It is best to use shot-gun cans for containing the cream, as these cool the cream much quicker and can be placed in the vat more conveniently. Stirring will hasten the cooling of the cream by liberating animal heat and bringing the warm cream in contact with the sides of the can. The cream usually will not cool down to equal the temperature of the water, hence the necessity of cool, fresh water around the cans.

Another very important thing to avoid is mixing warm cream with that previously separated. There is a strong tendency to do that, especially where hand separators are used and only a small amount of cream is produced each day. It warms the cool cream sufficiently so the undesirable bacteria begin to work and after this is repeated several times, the cream is sure to be poor in quality.

Usually the price paid for butterfat is fixed according to the quality of the cream. When there is a difference of from 1½ to 2 cents per pound for butterfat from first grade cream, it is greatly to the patron's advantage to take the necessary precautions to deliver a first class article. With a creamery averaging 20,000 pounds output per season, and the product selling at least 2 cents per pound below market quotations for first grade butter, will lose \$400.00. If the quality of the cream is not first class when delivered, it is impossible by the best methods of manufacture to make a first grade product, consequently it must sell at a great disadvantage on the markets, and in the end the producer is the heaviest loser. Quality should be sought for and must begin with production.

3 PAIRS SHEARS FREE, PAGE 31



KENDALL'S SPAVIN CURE

The world-wide remedy. Once used, always used. Cures Spavin, Splint, Ringbone, Curb, Swellings, Lameness.

\$1 a Bottle; 6 for \$5
All Druggists. Get free book, "Treatise on the Horse."
DR. B. J. KENDALL CO.
Enosburg Falls, Vermont

CORN SILOS

J. O. Perkins of Ramsey County has written to Commissioner Flint in regard to the use of silos in caring for corn fodder and is well worth attention on the part of every farmer.

Dear Sir: Your letter of recent date at hand and note your inquiry about the practical and profitable side of the silo question for North Dakota.

This fall makes the sixth time I have filled the silo and it has proved very satisfactory to me in every way. There is no way that you can harvest and store corn fodder so cheaply as in the silo. Take the corn when it is at its best, full of juice and strength, before the sap has gone to the kernel, and frost and wind have whipped the blades from the stalk; cut it in the silo and you have one of the most successful feeds to be procured. There is no loss whatever.

Now, in regard to my silos, we have two, each sixteen feet in diameter and thirty-two feet high. They hold one hundred and twenty tons each, (silo measure), when filled. They are the stave silos made of western fir lumber and cost me \$250 each.

It cost me to fill those silos this fall (and I paid \$3 per day for help outside of team work) 50 cents per ton.

In regard to filling the silo, it, of course, depends how far you have to haul your corn. This year we had the corn quite near the building and I got enough corn off forty-five acres to fill them, but we cannot do that every year. I like to plant about eighty acres so as to be sure to have plenty of it. We arrange the cutter between two silos and change the blow pipe from one to the other as they get filled which method gives the silage a chance to settle in one and the other as the work progresses. We then let it stand a week or ten days and go back and fill them up again. When they are full we put from six to sixteen barrels of water on the top. That is all there is to do to it. The ensilage is ready for use at any time.

I was talking to a dairyman last winter (by the way, he did not have any silo) in regard to how his cows were milking. He said: "They milked well when he paid them for it." He was paying \$30 per ton for bran and \$11 a ton for Minnesota slough hay. He was tired of the business and said

CENTRE-LANE STOCK FARM

BREEDER OF: Black Percheron and Hambletonian Horses, Red Polled Cattle, Poland China Hogs, White P. R. Chickens, White Holland Turkeys, White Embden Geese, White Pekin Ducks and White Guinea Fowls.

GROWER OF: Minnesota No. 169, Spring Wheat, Swedish Select Oats, White Hulless and Success Beardless Barley, Turkey Red Winter Wheat, N. D. 959 Winter Rye, Northwestern Dent Corn, Early Ohio Potatoes, Timothy and Alfalfa.

Young Stock and Pure Seed, for sale. Write me for particulars.

J. A. ENGLUND, Prop.

Kenmare, North Dakota.

THE ENVILLA STOCK FARM

COGSWELL, NORTH DAKOTA

SHETLAND PONIES. All colors, ages and sizes.

REGISTERED ANGUS CATTLE. Most popular families.

HEAVY DRAFT STALLIONS AND MARES. TWO SPANISH JACKS.

WOLF AND FOX HOUNDS that will catch and kill.

PET STOCK OF ALL KINDS.

PURE BRED POULTRY.

We can please you both in Quality and Price

L. H. WHITE, Prop.

COGSWELL, N. D.

LISBON TANNERY

Hides, Furs and Robes

We tan Horse and Cattle Hides. Skins of all fur animals for Robes and Coats. Oak Harness and Lace Leather. Robes are our specialty. No Complaints. Skilled Labor. Twenty-five years' experience. All work guaranteed. Pay highest market price for Hides and Skins. We keep a line of Harness Leather and Robes for sale. We pay the freight on Green Hides for Robes and Leather. Send for price list and shipping tags.

Lisbon, N. D.

OTTO JENSON, Proprietor.

there was no money in it, and I think he was right. Had he had a silo and ensilage at 50 cents a ton, and some good corn fodder for roughage, he would have been far better off and he could have grown that on his own farm. To be sure the butter and milk products are high now all over the state, but feed and help are still higher. Now it seems to me that if a man with a bunch of stock expects to make it pay he ought to put up a silo and should also plant corn. There is no plant, no matter what it is, that you can grow as much to the acre as you can of corn. All kinds of stock like it, it is easily handled and taken care of if you are arranged in the right way to handle it. Once in a while a man asks me if he cannot use green oats or wheat for silage. It is not satisfactory. I tried it once and found that there is not left enough to it and stock refuse to eat it.

Now, Mr. Flint, I think you will not make any mistake in urging the farmers to put up a silo. Talk corn and silos every chance you get, and all those you get to put up a silo will thank you for it some time. If I can be of any assistance to you at any time do not hesitate to call on me. Hoping this is satisfactory to you I am,
Yours respectfully,

J. O. Perkins,
Devils Lake, N. D.

P. S. We are still using the milking machine and would not part with it.

WOOL **DON'T SACRIFICE YOUR WOOL** Save a Middle-man's profit—
From Grower to Mill. Get our **SELL A POUND.** Our outlet is enormous. We charge no commission, grade **HONESTLY**, and remit immediately on receipt of wool. Send for our **Price List, TODAY.** Note our location, close to the great consumers, and our responsibility, Capital \$500,000 paid.
WEIL BROS. & CO.,
BOX 31 FT. WAYNE, IND

Poultry Department

Prof. O. W. Dynes, Agricultural College

Use only clean grain free from mustiness of any kind to poultry if good results are to be obtained.

Dry feeding of chicks as well as laying hens seems to give better satisfaction than wet sloppy feeding. If wet mash-ers are fed they should be crumbly in their nature and not saturated. Wet feeds are dangerous as it is in such feeds that bacteris flourish.

Remember that it is the April and May hatched chicks upon which dependence must be placed for winter eggs next year.

The approach of the warm season makes it imperative that all good poultry keepers prepare to fight off lice and mites in the poultry yards. Practice a fair degree of cleanliness and use germicides. Filth in the poultry yards should not be tolerated. All house fixtures such as nests, roosts, dropping boards, etc., should be removable.

The best remedy for a rousy fowl is the hatchet. Even if by care and attention such a fowl recovers it will never be profitable to keep the bird about the yards.

POULTRY EXPERIMENTATION AT THE NORTH DAKOTA STATION

The establishment of a poultry department at the North Dakota Station dates back into the early history of the institution. Up until 1897 little was done in the poultry line beyond the erection of buildings and the securing of stock and equipment. The most considerable ex-

periment during this period was on the relative merit of artificial heat in houses for laying hens, the conclusion being drawn that heat furnished by stoves to fowls was beneficial and profitable. Later experiments have shown that this conclusion is erroneous a most effectual argument against it being presented on one cold December night in 1904 when the large poultry house on the station was burned to the ground caused by the fire in the stove which was supposed to warm up the cold hen and make her lay.

The development of poultry experimentation during the ten-year period from 1897 to 1907 was necessarily slow. This was due to the fact that in common with every other station in the country other departments were developed and maintained which seemed of greater importance. Student labor was used almost entirely and only enough stock was carried to suit the limited equipment and the original housing and yarding. However, during these years much experimental work was carried to completion and other work planned. A great deal of the present work, notably the breeding experiments which have extended over a series of years, finds its beginnings during this period.

The first published results of any magnitude was embodied in Bulletin No. 78 of the North Dakota Experiment Station. This publication was mainly on the care, management and housing of fowls but contained some experimental results of considerable value. The main object of this bulletin, however, was to

furnish reliable information concerning poultry raising to the farmers of the state and was quite general in its nature. Preliminary experiments on cold vs. warm housing, in breeding, and grade breeding were discussed. This bulletin has been exceedingly popular and the demands for it have been so great that the original edition has been exhausted.

The nature of the experimentation extends over a wide field touching many phases of the poultry industry with special reference to the needs of the

Baby Chicks. 8 Cents Each. Shipped anywhere. Safe arrival guaranteed. Eggs for Hatching \$4.00 per 100.
Culver Poultry Farm, 1020 Reed St., Benson, Nebr

Silver Wyandotte Eggs, from Fargo
1, 2 Ribbon birds, \$3.00 per 13. From 300 hen flock, \$3.50 per 100 eggs. Baby chicks from flock, 10 cents each.
WYANDOTTE FARM
Woods, N. Dak.

Partridge Wyandottes

"Hardi-breds," A breed

which combines good laying quality with the finest table quality, to say nothing of unexcelled beauty.

My birds are from the Hadaway flock direct and among them is a son of "Boston". They are blocky, well marked and of trap-nested ancestry.

Some stock for sale at reasonable prices. Eggs: \$3 per 15 or \$5 per 30. Cash with order.

GEO. J. CHILDS, Casselton, N. D.

HAUSMANN POULTRY FARM

Breeders of W. Wyandottes and S. C. W. Leghorns
Hillsboro, - North Dakota

EGGS for hatching from 26 leading varieties. Bronze and W. Holland Turkeys, Pekin ducks and chickens. Catalog free. **L. GULDEN, OSAKIS, MINN.**

MAMMOTH BRONZE TURKEYS

I have a few very fine toms for sale yet.

JOHN F. SIMON, Oberon, N. D.

MAMMOTH BRONZE TURKEYS

from winning stock
EDGEWOOD FARM, R. F. D. 2, Fargo, N. D.

S. C. W. LEGHORNS

Prize winners' stock for sale. Eggs a specialty. **GEO. A. FOWLER,**

Box 486, Casselton, N. D.

Rose Comb Black Minorcas

Eggs for sale, \$2 for 15 eggs.

C. WYSH, CASSELTION, N. D.

Thirty Prizes At State Show

White Barred and Buffed Rocks. First on Pens of these Farmers' Favorites. White and Buff Wyandottes Eggs from Price Pens \$2.00 per 13.

H. P. COOPER, Casselton.

IF INTERESTED IN

BEEES, POULTRY OR DAIRY
You should read **MODERN FARMER**
Eldon, Mo.
10 Months For Only 10 Cents

GRAND 5-YEAR OFFER, PAGE 20

state. It has been the aim of the investigators to conduct all trials with a practical end in view. These trials have included the grade breeding tests previously mentioned, experiments in in-breeding, breeding for egg production, competitive breed trials, cold vs. warm housing, range vs. intensive conditions, caponizing, incubation experiments, the

effect of cold on the fertility of the egg, the effect of age on the hatchability of the egg, feeding experiments and cost of production. In addition to this a great deal of information has been furnished by the mass of data assembled during the progress of the experiments which throw light on other problems and opens up new fields of investigation.

Farmers Must Organize

An Address Delivered at St. Louis before the
Farmers' Union---By J. H. Worst,
N. Dak. Agri. Col.

Excepting agriculture, it would be difficult to single out a prominent business, profession, or industry whose members are not protected by some form of organization. Many of these organizations are national in character. While not all have accomplished the end sought, yet in the main they have materially advanced the interests they were intended to promote. The legislation of the country, to a considerable extent, bears the impress of influence exerted upon congress by these organizations. Capital is always highly organized and aggressive. Labor organizations are numerous and powerful embracing almost every field of human toil. All organizations exemplify the potency of combined effort; that "in union there is strength"; that "united we stand, divided we fall".

A Modest Vocation

The vocation of the farmer, the ancient and honorable, nevertheless is extremely modest. It has never been aggressive nor self-seeking in America. The virgin soil of a vast continent has yielded its tremendous annual quota of wealth with but little reference to science, conservation, or organization. Moreover, but little thought has been given to the establishment of a permanent agriculture. The waning crops of the east were supplemented by the larger yields from millions of acres of new but more fertile lands annually brought under the plow, as the tide of emigration moved steadily westward. The very abundance, on the frontier, of nature's resources made thrift natural and easy, tho it almost banished "economy" from the western farmers' vocabulary. He has been prodigal. He has been wasteful. The spirit of exploitation has dominated the frontier farmer and lingered, alas! too long with those who remained stationary while the frontier moved onward.

Exploitation, however, is not a serious crime in a new country. The rugged and ambitious, the pioneer was usually a man in moderate circumstances. Often he was pinched with

poverty. Land, however, was abundant and extremely rich in all the elements essential for the production of abundant harvests. Under these circumstances, a certain degree of exploitation would appear to be justifiable. Certainly it would seem harsh to denounce it as immoral. That wasteful methods of farming should become a habit, and that middlemen should organize to exploit the farmer as he, in turn, exploited his land, naturally resulted from existing conditions. There was enough for both. The farmer prospered in spite of the toll that was exacted by those who fixed the price of his crops—a toll which too often left the farmer but little above the cost of production. From the time the grain left the threshing machine, it paid toll after toll, until it was delivered in manufactured form to the ultimate consumer.

But the frontier and the pioneer farmer are rapidly passing. New conditions are looming big on the social and business horizon, and this convention is the natural sequel to a widespread demand for conservation and co-operation along broad lines. Farmers are awakening to the fact that the fertility of the soil must be conserved—also that the values and profits must be conserved. The day of exploitation, or wastefulness, or needless manipulators of farm products is drawing rapidly to a close.

Co-Operation

Farmers henceforth must study the economical side of agriculture and devise means for the most effective co-operation among themselves.

All growth is the result of organization. The organization feeds upon and assimilates the unorganized elements, no less in the business and commercial, than in the natural world. Millions of isolated farmers, operating independently and without co-operation, have no effective voice in regulating the price of their farm products when put upon the market, or of the

commodities they must purchase for home consumption. As the un-organized elements in the soil—nitrogen, phosphoric acid, potash and other mineral constituent are seized upon and chemically or biologically combined to build up the growing plant, so the farmers, out of the income of their labors, are forced to contribute more and more to plundered fortunes, built up out of profits legitimately belonging to themselves.

As long as the natural resources of the country were greatly in excess of the immediate needs of the country, this system of quasi robbery could be tolerated without impoverishing the rural districts. In other words, the farmers' profits could be largely appropriated by speculators and still leave him fair compensation for his labor and invested capital—useless and unfair as the exaction of this toll, taken by unnecessary middlemen, may have been.

But with increasing population and contraction of the public domain, intensive agriculture of necessity, will supplant extensive agriculture. Economical farming is bound to take the place of wasteful farming, in the very near future. Farms will necessarily become smaller and the lessened area cultivated as a homestead will be compelled, not only to produce more per acre, but greater economy will have to be practiced in farm management. Less can be wrenched away or wasted and a reasonable degree of prosperity be enjoyed. Sheer necessity thus will compel farmers to organize for their own protection and thru co-operation enjoy in larger measure the fruits of their labors. The opportunity for establishing these reforms is real and should appeal forcibly to every farmer, for the country demands it.

Co-operation in Holland

In Holland and in other European countries, small farmers—and farmers there are mostly small farmers—have learned the value of co-operation. Owing to the tremendous pressure of population upon the land, every acre available must be utilized to furnish food for the people. Moreover, every acre must product maximum crops of grain and vegetables and the most rigid economy must be practiced by the farmers to enable them to live and pay the rent demanded by the land owners. When it was found impossible to pay rent, support the family, and divide profits with speculators or corporations the farmers sensibly devised means whereby they could eliminate the speculator and enjoy all the legitimate profits of the farm. They took the business of manufacture and distribution into their own hands, and, instead of selling the raw material at prices

fixed for them, they now convert the products of their farms into consumable form and receive, as profit, what the world's market offers for the finished goods, less the cost of production, manufacture and a small commission to pay the expense of management.

In the dairy districts, creamery corporations formerly purchased the farmers' milk at their own price, manufactured the milk into cheese, or the cream into butter, and made a good profit out of the business. The farmers concluded if they could enjoy the manufacturers' profit in addition to the very small profit the companies permitted them to enjoy in order to secure their patronage, that they could well afford to create an innovation by undertaking the business of manufacture for themselves. While in this frame of mind, they subscribed sufficient stock to erect and equip a farmer's creamery, each subscriber obligating himself to furnish a definite quantity of milk for

each share of stock he subscribed and paid for. The finished product was sold in general market by their own agent. After the foreman of the creamery and his helpers were paid off and five per cent of the proceeds set aside for depreciation, likewise a small commission paid for selling the product, the remainder was divided among the stockholders in proportion to the quantity and quality of milk each stockholder had furnished. The farmers thus received all the profits they otherwise would have received and, in addition, what the commercial organizations would have demanded for themselves.

Was it a success? It was. Farmers readily learned that they too could do business other than produce raw material; that it was not necessary to give away more than half of the legitimate profits of the business in order to permit capitalists to do what they could more profitably do for themselves.

(To be Continued)

FROM THE NATION'S CAPITOL

By GUY E. MITCHELL

ARGUE FOR RURAL PARCELS POSTS

Much interest is attached to the hearings of the House of Representatives Committee on Post Offices and Post Roads which are being held this week on the Foster and Bennet bills proposing the creation of a rural delivery parcels post.

Representative Foster of Vermont, in advocating his bill expressed it as his belief that with the adopting of the proposed measure, the deficit in the Post Office Department will be wiped out or nearly so. "The deficit in the postal service now," he said, "amounts to between twenty-five and thirty millions a year. If by the operation of a parcels post each of the 40,000 rural carriers collected only one dollar a year it would mean \$40,000. I believe in paying attention to revenues which draw even so small a sum.

"The rural carriers are clamoring for more pay. They will continue to clamor until they receive a wage upon which

they can live, whether we have a parcels post or not. Let the parcels post for rural districts be tried out on its own merits for a couple of years. I am sure it would prove a paying institution."

"A rural parcels post bill would not hurt the local merchants, but would increase their trade," said Representative Bennett of New York. "No farmer wants to hurt the local merchants. The country merchant usually carries the farmer on his books for months at a time, until the farmer's crops are sold."

On the other hand, W. F. Richardson of Washington, who appeared as the representative of the National Association of Retail Druggists, contends that the mail order business would be greatly increased, trade centralized and the small merchant ruined by the adopting of a rural parcels post.

NURSERY STOCK QUARANTINE

The House of Representatives Committee on Agriculture gave a hearing

this week upon the Simmons bill, which seeks to establish a quarantine against foreign nursery stock. Nurserymen and agricultural experts from various sections of the country were heard for and against the proposed legislation. The Simmons bill will prohibit the introduction of foreign nursery stock except by permit, the claim being that a number of insect pests are introduced by means of the promiscuous importation of foreign stock.

PREPARE FOR FROST

During the past week the fruit belt of Indiana, Illinois and Michigan, not to tell of the "Sunny South" was visited by a blighting fall of the temperature and a consequent loss estimated in millions of dollars. In Berien county, Michigan, alone the estimated loss is \$2,000,000, while the loss in the State of Indiana is stated to be in the neighborhood of \$5,000,000.

In many places where the cold was felt an effort was made to combat the elements by burning straw in the orchards and vineyards. These, however, appear to have been emergency measures and were in the main unsuccessful. In some parts of the country subject to sudden early frosts the farmers have learned a lesson in this regard and equip themselves with frost-fighting apparatus consisting of kettles in which crude petroleum can be burned. It has been found that at a comparatively small expense entire crops can be saved when a few hours' warning is given. By means of these kettles set in regular rows beneath the trees, the temperature of an orchard can be raised ten or twelve degrees, so that, short of a real blizzard with a drop in temperature to below 20 degrees above zero, it is possible to save the fruit buds from destruction.

The lesson is obvious that with an expenditure of say \$10,000 in the purchase of kettles and oil, possible ten million dollars' worth of fruit might have been saved. Probably the damage this year will teach the fruit men the lesson that they are running too grave a risk each spring when they leave their orchards exposed to the vagaries of the climate, without any means of their own except hastily providing bon-fires to prevent wholesale losses. The teachings of the Department of Agriculture and the experiment stations must eventually have their effect in demonstrating that no orchard is safe unless equipped with the apparatus for fighting the frost which experience has proved to be effective.

The big trihornatus or Scimitar-horned Brontasour secured by the Roosevelts in the Bagan swamps, has been classified by the scientists as a *Menura leucocephalus palustris*.

\$250 PRIZE TRY FOR IT, SURE!

Nothing Hard but Calls for Some Ingenuity and Skill. It Means \$250 in Gold for Someone. This is not a music offer—just a puzzle—a brand new one—interesting whether you know music or not. \$250 Reward for working it. Are you confident you can find out what sentence this diagram makes? You can consult books or musicians and get your friends to help you. Just try it. Someone will get the \$250; WHY NOT YOU? The given notes, when correctly read, make a sentence, which we will pay you to work out. The notes run as in music—those on the LINES are E, G, B, D, F; those in the SPACES are F, A, C, E, as shown by the letters at each end of diagram, to be read from left to right as in ordinary print. Thus the first four notes make the word "AGED." What is the rest of the sentence? The \$250 will surely be paid without quibble or fail; this is a legitimate puzzle contest complying with all the requirements of law; you might just as well win prize as the next one. Write out your answer now and send it to us today with 50 cents for 6 month's subscription to our big illustrated weekly, the *Pathfinder*. Gives gist of news at home and abroad; non-partisan, reliable; more real meat in it than in any dozen ordinary papers put together; contains all the "best seller" novels condensed for rapid reading—many other unique features. 17th year of success. We have paid out many hundreds of dollars in prizes; our awards are always made promptly and fairly. Contest closes June 27, 1910; prizes paid and winners' names published at once. To the person who correctly reads the puzzle we will pay \$250 in cash. If there should be more than one correct answer we will divide the prize equally among the tying contestants. You mustn't miss this chance. 50 Cents Brings Paper 26 Weeks and Correct Answer Secures Prize Money. Don't delay. Address *Pathfinder*, Box 88, Washington, D. C.

TO SELL EGGS BY WEIGHT

Representative Alexander of New York has introduced a bill to compel the sale of eggs by weight instead of by number as now. Eggs to be used for hatching purposes are declared exempt. A fine of \$5 for each violation of the weight provision is proposed by the bill.

Some members of the House found amusement in the fact that the Alexander measure was referred to the Committee on Coinage, Weights, and Measures. Why not? The hen is the hardest working mint in the land and coins more dollars every year than the gold output of the United States.

DANGER TO THE TURKEY INDUSTRY

Blackhead among turkeys has come so near to working extinction of the "national bird," in New England and elsewhere that an extended investigation of the cause of the disease is being made by such scientists as Dr. Theobald Smith and Dr. E. E. Tyzzer, of the Harvard Medical School, and Dr. Philip Hadley, of the State Experimental station of Rhode Island. A similar disease has of late spread to game birds, such as partridges and quail, and the Massachusetts fish and game commission is prosecuting an investigation in this special line.

Harty's Barred Rocks Specials

(Either Cockerel or Pullet Mating)

EGGS \$2 for 13--\$7 for 50. Limited number from special pen \$5 for 15. Bred direct from prize winners at New York and Boston Shows.

H. C. HARTY, Bottineau, N. Dak.

BARRED ROCKS

Choice Stock and Fair Treatment.

ROBERT B. REED

Box 2.

Amenia, N. D.

White Crested Black Polish

Chickens, Eggs \$3.50 for 15, Chicks \$7.50 a pair.

J. R. POLLOCK, Casselton, N. D.

Make Your Hens Lay More Eggs

I have a method that will make your hens lay every day; it never fails. Write for it,

MRS. B. F. WILCOXON,
Hillsdale, Wyo., Dept. 5

EGGS! EGGS!

White Plymouth Rocks	15, \$1.50
White Holland Turkeys	10, \$1.50
Pekin Ducks	10, \$1.00

Angus Cattle and Oxford Down Sheep stock always for sale.

WILLOBANK FARM

Eastgate Bros., Larimore, N. D.

Northern Minnesota and North Dakota Grown SEED CORN---CLOVER---GRASS SEED AND SEED GRAIN

N. J. OLSEN CO.,

Moorehead, Minn.

Peas Clover Corn

North Dakota grown seed. Send
for catalog

PURE VELVET CHAFF WHEAT
CHIOCE ALFALFA

FARGO SEED HOUSE, - - - Fargo, N. D.

See Ad Offer, Page 2--A Winner

School and Home

A TWILIGHT PASTORAL

By J. W. Foley, Bismarck, N. D., in Household

I'm a-sittin' here with Milly, while the sun is goin' down,
Sorter lover-like and silly; she's a-mendin' of a gown,
Or a-darnin' of a stockin' and 'a-dreamin' 'long o' me,
An' I'm sittin' here an' rockin', just as happy as can be.
There's a breeze out in th' clover, that is white an' full o' bloom,
It grows sweet in blowin' over, an' the incense an' perfume,
An' th' twilight, an' above her, where th' nightbirds cry an' call,
Make me want to live an' love her an' be happy, an' that's all!

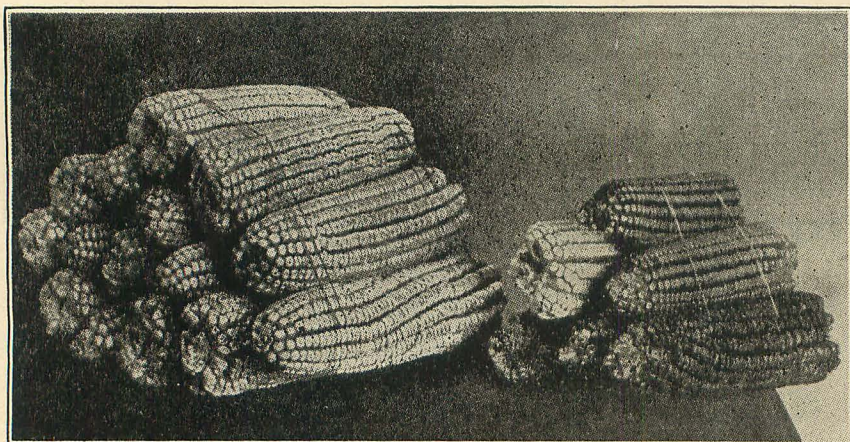
She don't seem to feel like talkin' now she's got her mendin' done,
'An' I'm quite content with rockin' an' a-watchin' where the sun
Seems to be a-runnin' over, an' th' red that's in th' sky
Splashes all th' field of clover an' th' pasture lands close by;
An' she sits there, eyes half closin' at th' endin' of the day
'Till I might think she was dozin' if I didn't know her way,
But I know she's half a-dreamin', for she's let her mendin' fall;
Let th' day be bright an' beamin'—let's be happy, an' that's all!

'Tain't a dream o' piled up riches or a palace up in town,
'Tain't a dream of rest from stitches, as she lays her mendin' down.
Just a dream of half a plenty—what th' Lord ordains to give,
An' th' love we had at twenty all th' time we two shall live;
For she's proud on lookin' over where th' clover's all a-shine
That th' house an' land an' clover are our homestead—hers an' mine,
An' no matter what th' weather, in th' seedtime or th' fall,
May we live along together an' be happy, an' that's all!

'Tain't an' awful sight to ask for, but you find as life unfolds
It's th' best there is to ask for, for it's all that livin' holds;
Just to be well met an' mated, an' to go where duty leads,
An' be sorter consecrated to each other's little needs;
So I sit an' look at Milly an' she sits an' looks at me
Sorter lover-like an' silly, but as happy as can be,
Soft as twilight on th' clover Peace upon us seems to fall,
An' a prayer is whispered over—"Let's be happy" an' that's all!

THE ROCKEFELLER FOUNDATION

There is hesitation in the Senate to give Mr. Rockefeller the charter that he wants for his Foundation. The chief objection offered is that it would put a vast money power in the hands of a few persons who would not be responsible to any authority, and would be exempt from judicial interference. Under the charter, it is suggested, they might conclude to let the funds of the Foundation accumulate until they reached a sum that anxious persons would lie awake at night to be afraid of. Two modifications are suggested: that the government shall always be adequately represented in the Board of Trustees, and that the Foundation shall expire at some definite time, when the income shall be distributed. There is also a sentiment that there should be some judicial check on the powers of the trustees.



Scientifically-selected seed and Seed taken at Random.

The fact that there is no precedent for the establishment and control of such a benefaction as Mr. Rockefeller proposes to endow makes very careful forethought necessary. A fund that seems likely to contain hundreds of millions is a good deal of a Frankenstein's monster, and due thought about the machinery that is to animate it by no means implies a lack of appreciation of the head artificer's philanthropic purpose. The charter would be subject to repeal at any time, and that of course would be a check on the trustees of the fund. The objectors seem to lose sight of that. But the problem is to make a charter that will not have to be revoked. Mr. Rockefeller wants a charter that will endure. The last thing he is likely to wish is to have his Foundation exempted from ultimate governmental control. All property must always be subject to control by government. Ideas are not, and need not be, subject to such control, and that is where persons who bequeath ideas to posterity have one advantage over persons who hand down accumulated property.—Harper's Weekly.

HOW IT HAPPENED

Floyd D. Raze

Laura was a great big tigress
In the London "zoo,"
Trainer was a little poet,
Don't

know
who.

Once the trainer came up missing,
Search wa'n't made till late—
Now the English call this poet,
"Poet

Laura-
ate."

CORN GROWING

By Prof. J. H. Shepperd, Dean N. D.
Agricultural College

A cultivated crop in the system of small grain farming has become a necessity. It takes a comparatively short

and carries considerable grain in addition. It can be used to carry the farm horses thru the winter as it is usually clean and free from dust, making it about as good for livestock as hay. On the Chicago market shredded corn fodder in bales sells for the same price as timothy hay, which is a very good measure of its feeding value.

Fodder corn can be used satisfactorily in warming up grass fat cattle, that is, carrying them until sometime in December, when they can be sold as feeders on the market, and at a considerably better price than they would have brought at the time grass fat cattle were crowding the market.

No season is so poor for corn in this state that it will not reach a stage of maturity, which will enable the farmer to use it for carrying steers to a stage of good feeders in the month of December. On the average season the right varieties of corn will mature enough to enable the feeder to ripen up or fully fatten his steers ready for market.

A few people have used sheep in harvesting their corn crop and by this means secure it with very little expense for harvesting or feeding. They accomplish the results by having a flock of sheep herded in the corn, if it is not fenced, or simply turned into it if it is. The sheep take the corn from the stalks as it stands in the field and on account of their liking for a great variety, consume husks and blades very freely, in addition to the ears of corn. The sheep men commonly run their sheep in grain stubble and allow them to glean unharvested heads, pick up the weed seed, etc., before the corn is ready to pasture off. They seem to thrive as well if not better on soft corn, than they do on that which is fully ripened, so that a short season or one with early frosts is no disadvantage to the sheep growers, who want to feed off standing corn.

The dairyman commonly builds a silo and puts the corn into it at the glazing stage, and by this means produces a very high grade of winter roughage. A few of them who cannot afford silos, and a majority of the beef producers, cure this fodder and feed it either from the stack or from the shock during the winter. In a few cases I have known people to pasture off the corn with cattle and with hogs successfully, altho the majority believe this plan to be wasteful.

I believe the facts I have given above will be sufficient to convince any fair-minded man that corn should be grown in the rotation in this state, and that it can be utilized in such a manner as to more than cover the cost of growing it.

In planting corn I would put it on fall-plowed land, which has been manured before plowing if possible. I would recommend putting it in with a planter in hills after the fashion known as

time for the weeds which thrive in a particular grain to secure a very tenacious hold on the land. A change to a cultivated crop successfully eliminates them with the exception of a few very persistent ones, and those it cripples badly.

Even on land which is free from weeds, the growing of corn or potatoes makes a market addition to the yield of wheat or flax, for the two years following the corn. A noticeable increase in yield is obtained on the third year following the corn crop, and the three seasons' returns together greatly add to the income from the land.

In crop production one or two added bushels of wheat represent almost clear profit, as the cost of production for the yield of 15 bushels is nearly as great as that of a crop of 18 bushels.

Corn offers an excellent place for the stable manure to be worked into the soil thru its cultivation and growth. Manure helps it rather than hinders, as it might do on some of the other kinds of grain crops.

Corn is a heavy yielder of roughage

check-rowing. The majority of the people do not keep the weeds out of corn well enough to get good results, and when it is in hills so that it can be cultivated both ways, they succeed much better than they do when it is sown in drill rows, which allows cultivation only one way. Corn should be harrowed frequently until it is about five inches high. The crop will look like it is being ruined by the harrow and some stalks are torn out and killed, but since the harrow covers all of the ground and goes thru and around the hills of corn, it destroys the weeds so thoroly that the yield is usually much greater than where the harrow is not used on the crop.

days and have to make every hour count and so I am going to ask you to go to the field with me. I am going to use four horses on the spike-tooth harrow today. This may not sound attractive to you but if you will come with me I will show you some interesting things.

This field was plowed six inches deep last fall. It has been cropped over thirty years. When it was first plowed we could not plow so deep as the grain would lodge, but after a few years we started to plow a little deeper until now we can plow it six inches without any danger of lodging. By plowing this deep we have more room in which to store up water for dry weather and there

granules closer together in the lower soil layers and in so doing provides a means by which water is pumped from the subsoil, and it leaves a loose mulch on the surface which prevents this water from reaching the surface where it would be evaporated. "What is mulch?" When the soil is compact the individual particles which make up the soil mass are crowded close together and the spaces between them act in the same way as the capillary spaces in a lamp-wick or a blotter and the water rises rapidly. If this rise is allowed to go until the water reaches the surface evaporation begins and the water is lost as fast as it comes to the surface. Now when the soil is cultivated the spaces between the particles are made so large that water will not rise to the surface. The action is the same as when a lamp wick is cut in two, all of the water is held just below the loose layer of soil where plants can use it.

The horses are getting pretty warm so we had better let them rest a few minutes. No doubt you are tired too and we will sit down on the harrow and examine a handful of soil or "dirt" as it is sometimes called. You will notice that this soil is black. This color is due to the organic matter or humus which fills in the spaces between the soil particles. Humus is a sponge-like material which will absorb and hold more water than any other part of the soil. It also furnishes the greater part of the food for our farm crops when it decays. It is said that the heat produced by the decay of the humus in an acre of rich soil in one year is as great as that produced by the burning of a ton of coal. This means that it decays quite rapidly and must be replenished often if we wish to have plenty of food for our crops. This is done by applying barnyard manure and by growing clover on the land.

Now take some of the soil and rub it between your thumb and forefinger. You will notice that it has a slippery feel and that you can feel very few individual soil particles, which indicates that this is a clay soil. A sandy soil would have a gritty feel. Now pick up a lump of soil and break it in two carefully. Hold the fractured part of the lump where the sun will shine directly on it. Do you see the small sparkling bodies scattered in with the other material? Those are sand particles. The clay particles are so small that you cannot see them without the aid of a strong microscope. The silt particles are larger than the clay but they cannot be seen with the naked eye. Soils are always made up of sand, silt, clay and humus in varying proportions.

Well our horses are rested now and we will move on. Tilling the soil seems



A Young Farmer and his crop

The weeder does somewhat nicer work than the harrow, as the teeth are smaller and the pressure can be regulated instead of being constant and often rather heavy. Frequent and thoroly cultivation after the harrow is all that is required to produce a good field of corn and the yields of small grain which I have described as following it.

Nothing is more displeasing than a poor or uneven stand of corn in the field, and such a result has come more frequently thru a careless selection of weak seed corn than in any other way.

LESSONS IN ELEMENTARY AGRICULTURE By Prof. R. C. Doneghue, Agr. Col.

A FIELD TRIP

It is a bright morning about the middle of April. We are very busy these

is also more room for the roots of the crops to spread out and get food. This also means that there will not be so much food taken from any one place in the soil and the land will not be worn out as fast as it would have been, had we plowed it shallow all the time.

During the winter the soil was frozen solid but early in March it began to thaw a little each day and freeze again each night. This freezing and thawing has given the soil a more granular structure than it would have had otherwise, which makes it loose and friable. As soon as it was dry enough the field was disced in order that the soil might warm up.

You will notice as we pass along that the harrow leaves the soil more level than the disc did. The harrow does two things. It packs the soil

a very simple process to a great many people but there are many complex activities that are dependent on thorough tillage. We have discussed the effect tillage operations have upon the water supply of crops but this is not all that it affects. There are millions of minute plants called bacteria or "germs" scattered thru the soil which are influenced to a large extent by the tillage which is given the soil. These bacteria are very small, too small in fact to be seen with the naked eye, but their effect is sure and certain. There are many kinds, some of which are desirable and others which are undesirable. Some cause plant diseases, some prepare the food for plants, some take the food which has been prepared and break it down and liberate it as a gas causing a loss, and still others live in the knots or nodules on the roots of legumes like clover, alfalfa, field peas, beans, vetches, etc.

When we cultivate the soil carefully and thoroughly we make the conditions favorable for the class of bacteria which prepare the food for plants from the raw materials in the soil. When we fail to practise a good system of tillage the conditions are favorable for the development of the class that cause a loss of available plant food in the soil. Plants require that their food shall be in a certain form and if it is not in this form it is of no use to them. For example they are unable to use the free nitrogen in the air as food. But when a legume is grown the bacteria which live on the roots can take nitrogen from the air and change it into a form which is usable for higher plants. A good stand of clover will add as much nitrogen as there crops of wheat will remove.

Last year we grew corn on this field and it was cultivated every two weeks until the corn was too large to cultivate. The year before it was in clover. We will grow wheat here this year. We will put wheat here next year and the following year we will sow it to oats. We grow two crops of wheat in succession because this soil is well adapted to the growing of wheat and it pays us to raise wheat on it. It will not do to grow wheat too many years in succession, however, and so we put in a corn crop to keep down the weeds and keep the soil in good physical and sanitary condition. We grow clover to keep up the nitrogen content of the soil and supply the humus which is burned out when we grow the cereal crops. We grow oats because they make a very good horse feed and as they are better able to get plant food from the soil than wheat we put them in after wheat. You see we follow a five-year rotation: of corn, one year; wheat two years; oats one year; clover one year. This, of course, might not be a good rotation on all farms.

Well, here it is dinner time and I have told you only a small part of the interesting things that may be said about the seemingly lifeless material we call "dirt". I hope, however, that this may serve as a basis for you to study the many things that are concerned in the production of a head of wheat, an ear of corn, etc. Did you say your feet were tired? Well, it is some distance to the house and you may ride Tom if you wish. I am sure you will enjoy your dinner (which is also a product of the soil) after following the harrow all the forenoon.

THE NEW HOUSE RULES

What are the merits of the new plan of an enlarged membership elected by the House and forbidding participation by the Speaker in the meetings of the committee?

For one thing, it divides and distributes responsibility. The chairman of the new committee will divide with the Speaker authority over the deliberations of the House. None of the members will owe their place on the committee to the Speaker. The House will bestow the honor upon them, and membership on the Rules Committee is considered a great honor by the House, and it is assumed that those so chosen will be responsive to the wishes of the House.

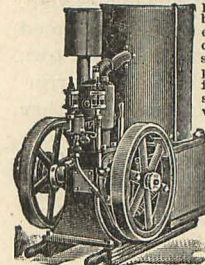
The overthrow of the old Rules Committee materially affects the great office of Speaker of the House. The Speaker's power is due primarily to the two circumstances that he has named all of the committees of the House and selected their chairmen, and that he has dominated the Committee on Rules. He could color the committees for or against continuing legislative proposals that he favored or opposed. His entire elimination from the framing and make-up of the Rules Committee goes far toward relegating him to the status of a mere parliamentarian. Tho the Speaker still retains a voice in selecting the men who shall be named to the Committee on Rules by party caucus, he can no longer sit with them. The loss of authority and power involved in this change is obvious.

The importance of the Committee on Rules was somewhat lessened last March when the so-called "Fritz-gerald amendment" to the rules was adopted, but it remained what some one has called "a master key among committees." It provides the means by which legislation may be prevented from being smothered in committee, and it offers a way to bring a bill directly before the House for a final vote without going thru a long and toilsome procedure. How well the new plan will work it is too early to say, and what its full effect will be cannot now be clearly foreseen and defined.

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CAMERA AND OUTFIT
FOOTBALL

FARM LANDS FOR SALE OR EXCHANGE

WE have several choice farms in the Montrose Valley for sale on easy terms. The railroad is pushing out into this territory, and it is only a question of time until farm lands will double in value. We also have a few farms for sale in the Mouse River Valley, Bottineau County. For particulars write the

Northern Investment Company

Williston, North Dakota

OUR ARL OFFERTAKES, PAGE 2

WAR ON THE TYPHOID FLY

During the past year the country has been aroused as never before to the danger of permitting the house fly to breed unchecked and to carry filth and disease thruout the communities. Many boards of health have taken up the matter, and much work has been done to emphasize the importance of this insect as a disease bearer.

"It is inconceivable," says Dr. L. O. Howard, Entomologist of the Department of Agriculture, "that human beings should so long have viewed this insect as a simple nuisance, and the public indifference has been due not only to the general ignorance of the danger but to the lack of such knowledge and comparative apathy on the part of boards of health as well as the medical profession in general. The very name 'house fly' suggests nothing harmful, and it is proposed that if in all publications in the future this insect be known as the typhoid fly, or as the manure fly, even the average individual will without trouble absorb some idea of its objectionable qualities.

"Altho the full life history and most facts concerning the house fly have been displayed in previous years in publications of the Bureau of Entomology, beginning with the early summer of 1908, an effort was made to learn certain facts connected with the seasonal abundance of the insect, with the idea of comparing at the close of the season the curve of house fly increase and decrease with the curve of typhoid increase and decrease, in the hope of emphasizing in this way the part played by the house fly in the carriage of typhoid, which is becoming more and more accepted even under city conditions. It seems certain that many otherwise inexplicable cases of typhoid, and even of epidemics of typhoid, are entirely or largely to be laid to the carriage of the germ by this fly."

ECONOMIC USE OF MEATS IN THE HOME

Discussion of the increasing cost of living has brought to light quite generally that the cheaper cuts of meats are more difficult to prepare for the table than the more expensive portions of the carcass, due to a lack of knowledge of how they may be made appetizing and palatable. With a view to providing the housekeepers of the country with practical suggestions along this line, the U. S. Department of Agriculture has prepared a manual of economy in meat cooking that contains much valuable information, which will be issued free. We publish several of the receipts contained in the valuable publication.

Meat Stew with Dumplings

5 pounds of a cheaper cut of beef.
4 cups of potatoes cut into small pieces.

1 cup each of turnips and carrots cut in to one-half inch cubes.

½ onion, chopped.

¼ cup of flour.

Salt and pepper.

Cut the meat into small pieces, removing the fat; try out the fat and brown the meat in it. When well browned, cover with boiling water, boil for five minutes and then cook in a lower temperature until the meat is done. If tender, this will require about three hours on the stove or five hours in the fireless cooker. Add carrots, turnips, onions, pepper, and salt during the last hour of cooking, and the potatoes fifteen minutes before serving. Thicken with the flour diluted with cold water. Serve with nice light dumplings. If this dish is made in the fireless cooker, the

mixture must be reheated when the vegetables are put in. Such a stew may also be made of mutton. If veal or pork is used the vegetables may be omitted or simply a little onion used. Sometimes for variety the browning of the meat is dispensed with. When white meat such as chicken, veal, or fresh pork is used, the gravy is often made rich with cream or milk thickened with flour. The numerous minor additions which may be introduced give the great variety of such stews found in cookbooks.

Twelve O'clock Pie

This is made with shoulder of mutton, boiled with carrot and onion, then cut up, mixed with potatoes separately boiled and cut up, and put into a baking dish. The crust is made by mixing

IN STUDYING MUSIC, the method is the most important thing to consider, because the time it takes and the cost all hinge on it.

You might spend a large sum of money in trying various teachers and methods, only to find in the end, that you have wasted your money, which wouldn't be so bad if the trouble ended there, but it doesn't: you have learned a lot of things that are not so--all have to be unlearned; that's time worse than lost. Start right!

Know before you start that you are starting right. If we don't furnish convincing proof of the superiority of the Quinn-Campbell Conservatory of Music's home study methods, you will not be out anything, but if we do, you will thank us to your dying day.

Best of all, we pay your tuition; all you need do is to give in exchange a few hours' help. When we receive your request for particulars, they will go by return mail. Why not today?

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smoothly mashed potatoes to which a tablespoonful of shortening has been added, with enough flour and water to make them roll out easily. A pie made of a pound of meat will require 5 or 6 small boiled potatoes, a cupful of mashed potatoes, and 8 or 10 tablespoonfuls of flour, and should be baked about twenty minutes in a hot oven. Salt, pepper, and other seasoning, as onion and carrot, may be added to taste. A teaspoonful of baking powder makes the crust lighter.

Meat and Tomato Pie

This dish presents an excellent way of using up small quantities of either cold beef or cold mutton. If fresh tomatoes are used, peel and slice them; if canned, drain off the liquid. Place a layer of tomato in a baking dish, then a layer of sliced meat, and over the two dredge flour, pepper, and salt; repeat until the dish is nearly full, then put in an extra layer of tomato and cover the whole with a layer of pastry or of bread or cracker crumbs. When the quantity of meat is small, it may be "helped out" by boiled potatoes or other suitable vegetables. A few oysters or mushrooms improve the flavor, especially when beef is used. The pie will need to be baked from half an hour to an hour according to its size and the heat of the oven.

Meat and Pastry Rolls

Small quantities of cold ham, chicken, or other meat may be utilized for these. The meat should be chopped fine, well seasoned, mixed with enough savory fat or butter to make it "shape," and formed into rolls about the size of a finger. A short dough (made, say, of a pint of flour, 2 tablespoonfuls of lard, 1 teaspoonful of baking powder, salt, and milk enough to mix) should be rolled thin, cut into strips, and folded about the meat rolls, care being taken to keep the shape regular. The rolls should be baked in a quick oven until they are a delicate brown color and served hot.

Meat Turnovers

Almost any kind of chopped meat may be used in these, and if the quantity on hand is small may be mixed with potato or cooked rice. This filling should be seasoned to taste with salt and pepper, onion, or whatever is relished, and laid on pieces of short biscuit dough rolled thin and cut into circles about the size of an ordinary saucer. The edges of the dough should be moistened with white of egg, the dough then folded over the meat, and its edges pinched closely together. If desired, the tops of the turnovers may be brushed over with yolk of egg before they are placed in the oven. About half an hour's baking in a hot oven is required. Serving with a brown sauce increases the flavor and moistens the crust.

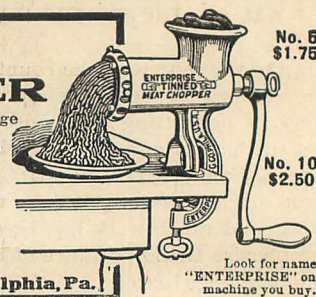
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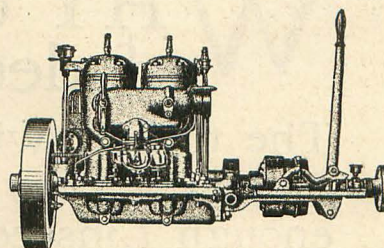
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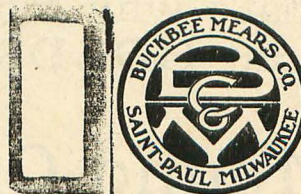
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